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AR 226 - 1706

Analytical Report

Fluorochemical Characterization of Soil Samples

Daikin America Well Installation

Exygen Research Laboratory Report No. L0001278A

Testing Laboratory

Exygen Research
3058 Research Drive
State College, PA 16801

Requester

John Simmons
E. Robert Alley and Associates
210 N. Atlanta Avenue
Sheffield, AL 35660
(256) 383-1552

000291

3058 Research Drive
State College, PA 16801, USA
T: 800.281.3219
F: 814.272.1019
exygen.com

1 Introduction

Results are reported for the analysis of soil samples received by Exygen Research (Exygen) from E. Roberts Alley and Associates. The Exygen study number assigned to the project is L0001278A.

Specific fluorochemical characterization by liquid chromatography / tandem mass spectrometry (LC/MS/MS) was requested for all samples. A total of 32 samples were received for analysis.

The samples were prepared and analyzed by LC/MS/MS for the following list of fluorochemicals:

- Table 1: Target Analysis

Compound Name	Acronym
Perfluorooctane Sulfonate	C8 Sulfonate (PFOS)

The analytical methods used were originally developed for groundwater samples and were validated by Exygen. The validation protocol and results are on file with Exygen. The methods were adapted for soil samples. Soil sample methods have not been fully validated at this time.

2 Sample Receipt

The samples were submitted in amber glass containers. All samples were cooled to 4°C from time of collection to receipt at Exygen Research. Samples were stored at 4°C from receipt at Exygen Research until analysis. Samples were collected between 11/3/03 and 11/5/03. Chain-of-custody information is presented in Attachment C.

3 Holding Times

Field and laboratory spikes of these fluorochemicals have shown stability for periods greater than 90 days. Samples were analyzed within 60 days of receipt.

4 Methods - Analytical and Preparatory

4.1 LC/MS/MS

4.1.1 Sample Preparation for LC/MS/MS Analysis

Soil samples were extracted into methanol (5 grams of soil to 5 mL of methanol). The methanol extract was diluted to 40 mL with water. Solid phase extraction (SPE) was used to prepare the samples for LC/MS/MS analysis. The diluted extracts were transferred to a C_{18} SPE cartridge. The cartridge was eluted with 5 mL of 100% methanol. This treatment resulted in an eight-fold concentration of the diluted samples prior to analysis.

4.1.2 Sample Analysis by LC/MS/MS

In HPLC, an aliquot of extract is injected and passed through a liquid-phase chromatographic column. Based on the affinity of the analyte for the stationary phase in the column relative to the liquid mobile phase, the analyte is retained for a characteristic amount of time. Following HPLC separation, ES/MS provides a rapid and accurate means for analyzing a wide range of organic compounds, including fluorochemicals. Electrospray is generally operated at relatively mild temperatures; molecules are ionized, fragmented, and detected. Ions characteristic of known fluorochemicals are observed and quantitated against standards.

A Hewlett-Packard HP1100 HPLC system coupled to a Micromass Ultima MS/MS was used to analyze the sample extracts. Analysis was performed using selected reaction monitoring (SRM). Samples were extracted between 12/18/03 and 12/22/03. Samples were analyzed between 12/19/03 and 12/25/03. Raw analytical data is provided in Attachment D.

5 *Analysis*

5.1 Calibration

A 7-point calibration curve was analyzed at the beginning and end of the analytical sequence for the compounds of interest. The calibration points were prepared at 0, 25, 50, 100, 250, 500, and 1000 ng/L (ppt) for LC/MS/MS analysis. The instrument response versus the concentration was plotted for each point. Using linear regression with 1/x weighting, the slope, y-intercept and correlation coefficient (r) and coefficient of determination (r^2) were determined. A calibration curve is acceptable if $r \geq 0.985$ ($r^2 \geq 0.970$).

Calibration standards are prepared using the same SPE procedure used for samples.

Calibration check standards were analyzed periodically (every three to five sample injections) throughout the analysis sequence. Compliance is obtained if the standard analyte concentrations are within +/-20% of the actual value.

All calibration criteria were met for this analysis.

5.2 Blanks

Extraction blanks were prepared and analyzed with every extraction batch of samples. The extraction blanks should not have any target analytes present at or above the concentration of the low-level calibration standard. For these samples, the extraction blanks were compliant.

Instrument blanks in the form of clean methanol solvent were also analyzed after every high-level calibration standard, and after known high-level samples. Again, the blanks should not have any target analytes present at or above the low-level calibration standard. For the samples presented here the instrument blanks are compliant.

5.3 Surrogates

Surrogate spikes are not a component of the LC/MS/MS analytical methods.

5.4 Matrix Spikes

Matrix spikes were prepared for four samples. Matrix spike recoveries are given in Attachment B. Recovery is calculated from the amount present in the sample extract.

5.5 Duplicates

Laboratory duplicates were performed for four samples. The duplicate results are included with the sample results in Attachment A.

5.6 Laboratory Control Samples

For LC/MS/MS analyses, Milliq water was spiked with all compounds with each extraction set. All recoveries for all compounds were between 70-130% in each LCS. Results are given along with the raw data in Attachment D.

6 Data Summary

Please see Attachment A for a detailed listing of the analytical results. Results are reported in parts per billion (ppb) (ng/g). Results are reported on a dry-weight basis.

7 Data/Sample Retention

Samples are disposed of one month after the report is issued unless otherwise specified. All electronic data is archived on retrievable media and hard copy reports are stored in data folders maintained by Exygen.

8 Attachments

8.1 Attachment A: Results

8.2 Attachment B: Matrix Spike Recoveries

8.3 Attachment C: Chain of Custody

8.4 Attachment D: Raw Analytical Data

9 Signatures

Paul Connolly, Team Leader - LCMS — Date: 1/5/04

John M. Flaherty, Vice President — Date: 12/30/03

Other Lab Members Contributing to Data

Karen Risha

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Summary of PFOS in Soil Samples

Sample ID	Analyte Found (ng/g) PFOS^	Total Solids (%)
MW-2 (0-2)	1900	84.67
MW-2 (0-2)*	1590	84.67
MW-2 (3-5)	2370	81.95
MW-2 (8-10)	1980	90.42
MW-2 (13-15)	107	79.15
MW-2 (18-20)	133	80.22
MW-2 (23-25)	116	78.89
MW-2 (28-30)	303	79.09
MW-2 (33-35)	106	76.81
MW-5 (0-2)	3410	86.68
MW-5 (3-5)	425	86.58
MW-5 (8-10)	1800	86.34
MW-5 (13-15)	338	79.45
MW-5 (18-20)	399	75.93
MW-5 (23-25)	430	74.05
MW-5 (23-25)*	413	74.05

*Laboratory Duplicate
^Dry-weight basis

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HAZARD COMMUNICATION—The client has the responsibility to inform the laboratory of any known or suspected hazardous characteristics of the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

QUALITY ASSURANCE—Exygen will perform services consistent with its Quality Assurance Standard Operating Procedures (SOPs), the terms of which are expressly incorporated herein by reference; provided, however, it shall be the exclusive responsibility of the client to confirm that Exygen's standard practices will meet the client's needs prior to placing an order for work. In the event client desires an alternative to these SOPs, such requests must be made in writing prior to sample submission and acceptance by Exygen.

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SPECIAL REPORTS—Additional charges may be necessary for custom report formats.

LITIGATION—All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Exygen Research shall be invoiced by Exygen and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations, and for any and all other expenses associated with said litigation.

INDEMNIFICATION, LIABILITY, AND INSURANCE—Exygen agrees to indemnify, defend, and save the client, its officers, directors, employees, agents, and representatives harmless from all losses, expenses, demands, and claims made against the client, its officers, directors, employees, agents and representatives because of any personal injuries, death, or property damage to the extent caused by the negligence or willful misconduct of Exygen, its employees, agents, or representatives in connection with the performance of services under this agreement, except to the extent such losses, expenses, demands, or claims, occur as a result of the negligent or willful acts or omissions of the client, its officers, directors, employees, agents, and representatives; however, such indemnification and damages shall, in the aggregate, be limited to the amount equal to the lesser of (a) damages suffered by the client as the direct result thereof, or (b) the total amount paid to Exygen for the work herein covered. Exygen will, if requested by the client, furnish certificates of insurance from its carrier evidencing appropriate insurance coverage.

WARRANTY AND LIMITS OF LIABILITY—In accepting analytical work, Exygen guarantees the accuracy of the test results for the sample as submitted within the tolerances set forth in the SOPs. We disclaim any other warranties, expressed or implied by law. Exygen does not accept any legal responsibility for the purposes for which client uses the test results. Exygen will not accept any purchase order or any other order for work that includes conditions that vary from these Standard Conditions.

ACCEPTANCE OF PURCHASE ORDER—This Purchase Order becomes a binding agreement, subject to the specific terms and conditions stated herein, upon Exygen's commencement of work.

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Summary of PFOS in Soil Samples

Sample ID	Analyte Found (ng/g) PFOS^	Total Solids (%)
MW-4 (0-2)	333	88.07
MW-4 (3-5)	5130	83.17
MW-4 (8-10)	350	80.21
MW-4 (13-15)	129	80.32
MW-4 (13-15)*	128	80.32
MW-4 (18-20)	99.1	77.80
MW-4 (28-30)	57.9	68.10
MW-3 (4-6)	2230	83.49
MW-3 (9-11)	155	84.75
MW-3 (14-16)	53.4	74.92
MW-3 (19-21)	16.9	81.95

*Laboratory Duplicate
^Dry-weight basis

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Summary of PFOS in Soil Samples

Sample ID	Analyte Found (ng/g) PFOS^	Total Solids (%)
MW-1 (0-2)	1700	85.85
MW-1 (8-10)	394	80.12
MW-6 (0-2)	1970	94.85
MW-6 (4-6)	4850	82.13
MW-6 (9-11)	1970	84.66
MW-6 (9-11)*	1980	84.66
MW-6 (14-16)	3450	84.86
MW-6 (19-21)	1430	80.88
MW-6 (24-26)	372	78.28

*Laboratory Duplicate
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Recovery Summary for PFOS in Soil

Sample Description	Amount Spiked (ng/mL)	PFOS Amt Found in Sample (ng/mL)	PFOS Amount Recovered (ng/mL)	PFOS Recovery (%)
MW-2 (0-2) 250 ng/mL Spike	250	201	516	126
MW-5 (23-25) 50 ng/mL Spike	50	39.8	78.8	78
MW-4 (13-15) 25 ng/mL Spike	25	13.0	34.1	84
MW-6 (9-11) 250 ng/mL Spike	250	209	512	121

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T: 800.281.3219
F: 814.272.1019
exygen.com

Exygen RESEARCH

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Exygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
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000300

PROJECT INFORMATION

Client (name & address): E. Roberts Alley & Associates
210 N. Atlantic Ave.
Sheffied, AL 35660
Phone: (256) 383-1552
Fax: (256) 383-9698
Sampler: John Simmons

Project Manager (Name & E-mail Address): John Simmons
johns@eralley.com
Project Name: Daikin America Well Installation
P.O. #: Ref: 2003-0682A-002
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

PFDA by modified Exygen Method OLM-008-046 Rev1

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	PFDA by modified Exygen Method OLM-008-046 Rev1
	MW-2 (0-2)	11/3/03	15:10	X			Soil		✓
	MW-2 (3-5)	11/3/03	15:20	X					✓
	MW-2 (8-10)		15:30	X					✓
	MW-2 (13-15)		15:35	X					✓
	MW-2 (18-20)		15:50	X					✓
	MW-2 (23-25)		16:05	X					✓
	MW-2 (28-30)		16:15	X					✓
	MW-2 (33-35)		16:35	X					✓

LAB USE ONLY

CHAIN OF CUSTODY

Cooler ID # C456 Cooler Temp. (°C) 2.4

Relinquished by	Date	Time
John Simmons 11/6/03	~~16:00~~	16:00

Received by	Date	Time
	11/07/03	1040

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline: Standard

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

Exygen RESEARCH

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Exygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • exygenresearch.com

000301

PROJECT INFORMATION

Client (name & address): E Roberts Alley & Associates

Phone:

Fax:

Sampler: John Simmons

Project Manager (Name & E-mail Address): John Simmons

Project Name:

P.O. #: Ref 2003-0682A-002

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

PFOA by Modified Exygen Method 01M-008-0416 Rev1

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	PFOA by Modified Exygen Method 01M-008-0416 Rev1
	MW-5 (0-2)	11/4/03	10:55	X			Soil		✓
	MW-5 (3-5)		11:00						✓
	MW-5 (8-10)		11:05						✓
	MW-5 (13-15)		11:12						✓
	MW-5 (18-20)		11:20						✓
	MW-5 (23-25)		11:30						✓
	MW-4 (0-2)		13:50						✓
	MW-4 (3-5)		13:55						✓

LAB USE ONLY

CHAIN OF CUSTODY

Cooler ID # C456 Cooler Temp. (°C) 2.5

Relinquished by	Date	Time
John Simmons	11/6/03	16:00

Received by	Date	Time
[signature]	11/07/03	1040

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline: Standard

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

Exygen RESEARCH

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000302

PROJECT INFORMATION

Client (name & address): E Roberts Alley & Ass.

Project Manager (Name & E-mail Address): John Simmons

Project Name:

Phone:

Fax:

Sampler: John Simmons

P.O. #:

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	PFDA by Modified Exygen Method OIM-008-046 Rev 1						
	MW-4 (8-10)	11/4/03	14:05	X			Soil		✓						
	MW-4 (13-15)		14:15	X					✓						
	MW-4 (18-20)		14:25	X					✓						
	MW-4 (28-30)		14:45	X					✓						
	MW-3 (4-6)	11/5/03	9:10	X					✓						
	MW-3 (9-11)		9:15	X					✓						
	MW-3 (14-16)		9:25	X					✓						
	MW-3 (19-21)		9:45	X					✓						

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
John Simmons	16:00	11/6/03

Cooler ID # C4/6 Cooler Temp. (°C) 2.5

Received by	Date	Time
	11/6/03	1040

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline: Standard

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

Exygen RESEARCH

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000309

PROJECT INFORMATION

Client (name & address): E. Roberts Alley & Assoc.

Phone:

Fax:

Sampler: [signature]

Project Manager (Name & E-mail Address): John Simmons

Project Name:

P.O. #:

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	PFOA Modified Exygen Method 01M-008-D46 Rev.1						
	MW-1 (0-2)	11/5/03	11:45	X			Soil		X						
	MW-1 (8-10)		12:00	X					X						
	MW-6 (0-2)		15:30	X					X						
	MW-6 (4-6)		15:35	X					X						
	MW-6 (9-11)		15:45	X					X						
	MW-6 (14-16)		15:50	X					X						
	MW-6 (19-21)		16:10	X					X						
	MW-6 (24-26)		16:17	X					X						

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
[signature]	11/6/03	16:00

Cooler ID # 145C Cooler Temp. (°C) 2.5

Received by	Date	Time
[signature]	11/07/03	10:45

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline: Standard

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

RAW DATA REPORT

Sponsor Study No:	NA	Limit of Quantitation:	50 ppt	Set No:	121803A
Exygen Study No:	L1278	Injection Volume:	15 µL	Analyst:	Karen Risha
Analyte:	PFOS	Matrix:	Soil	Instrument Type:	LC/MS/MS Unit #6
Ions Monitored:	499 -> 99	Sample Weight:	5.0 g	Extraction Date:	12/18/03
Site:	NA	Final Volume:	5.0 mL	Analyzed on:	12/19/03

Exygen ID	Sponsor ID	Sample Code	Run No.	Std. Conc. (ppt)	Dilution Factor	Peak Area	Analyte Found (ppt)	Amount Added (ppt)	Recovery (%)	Analyte Found (ppb)	Total Solids (%)	Analyte Found (ppb) Dry Weight
XC121603-0	-	C	121803A-101	0	-	0	-	-	-	-	-	-
XC121603-1	-	CS	121803A-102	25	-	647	-	-	-	-	-	-
XC121603-2	-	CS	121803A-103	50	-	1445	-	-	-	-	-	-
XC121603-3	-	CS	121803A-104	100	-	2887	-	-	-	-	-	-
XC121603-4	-	CS	121803A-105	250	-	7007	-	-	-	-	-	-
XC121603-5	-	CS	121803A-106	500	-	15370	-	-	-	-	-	-
XC121603-6	-	CS	121803A-107	1000	-	26924	-	-	-	-	-	-
Methanol Wash	-	C	121803A-108	-	-	0	-	-	-	-	-	-
Reagent Blank	NA	C	121803A-109	-	1	0	ND	-	-	-	-	-
Reagent Spk A	NA	LCS	121803A-110	-	1	1616	57.8	50	116	-	-	-
Reagent Spk B	NA	LCS	121803A-111	-	1	15247	548	500	110	-	-	-
L1278-1 Spk C	MW-2 (0-2)	LF	121803A-112	-	1	2141016	^	500	-	-	-	-
L1278-14 Spk D	MW-5 (23-25)	LF	121803A-113	-	1	712081	^	500	-	-	-	-
XC121603-1	-	CS	121803A-114	25	-	743	-	-	-	-	-	-
XC121603-2	-	CS	121803A-115	50	-	1294	-	-	-	-	-	-
L1278-1	MW-2 (0-2)	S	121803A-116	-	1	2881959	*	-	-	-	84.67	-
L1278-1 Rep	MW-2 (0-2)	S	121803A-117	-	1	2507088	*	-	-	-	84.67	-
L1278-2	MW-2 (3-5)	S	121803A-118	-	1	3209743	*	-	-	-	81.95	-
L1278-3	MW-2 (8-10)	S	121803A-119	-	1	3213363	*	-	-	-	90.42	-
L1278-4	MW-2 (13-15)	S	121803A-120	-	1	259017	*	-	-	-	79.15	-
L1278-5	MW-2 (18-20)	S	121803A-121	-	1	300173	*	-	-	-	80.22	-
XC121603-3	-	CS	121803A-122	100	-	2621	-	-	-	-	-	-
L1278-6	MW-2 (23-25)	S	121803A-123	-	1	281116	*	-	-	-	78.89	-
L1278-7	MW-2 (28-30)	S	121803A-124	-	1	629941	*	-	-	-	79.09	-
L1278-8	MW-2 (33-35)	S	121803A-125	-	1	260205	*	-	-	-	76.81	-
L1278-9	MW-5 (0-2)	S	121803A-126	-	1	4503248	*	-	-	-	86.68	-
L1278-10	MW-5 (3-5)	S	121803A-127	-	1	892672	*	-	-	-	86.58	-
XC121603-4	-	CS	121803A-128	250	-	7168	-	-	-	-	-	-
L1278-11	MW-5 (8-10)	S	121803A-129	-	1	2949395	*	-	-	-	86.34	-
L1278-12	MW-5 (13-15)	S	121803A-130	-	1	685468	*	-	-	-	79.45	-
L1278-13	MW-5 (18-20)	S	121803A-131	-	1	788833	*	-	-	-	75.93	-
L1278-14	MW-5 (23-25)	S	121803A-132	-	1	790001	*	-	-	-	74.05	-
L1278-14 Rep	MW-5 (23-25)	S	121803A-133	-	1	811878	*	-	-	-	74.05	-
XC121603-5	-	CS	121803A-134	500	-	14318	-	-	-	-	-	-
XC121603-6	-	CS	121803A-135	1000	-	26663	-	-	-	-	-	-

Analyte Found (ppt) = (peak area - intercept) / slope x DF

Recovery (%) = [analyte found (ppt)-analyte found in control (ppt)] x 100 / amount added (ppt)

Standard Curve : Linear (1/x weighted)
Intercept = 11.5876
Slope = 27.7786
Coef. Of Det. = 0.995722

Analyte Found (ppb) = [analyte found (ppt) x volume extracted (0.04 L)] / sample weight (5 g)
Analyte Found (ppb) dry weight = analyte found (ppb) x (100% / total solids (%))

CS = Calibration standard
C = Control sample
S = Sample
LF = Lab fortified sample
FF = Field fortified sample
LCS = Laboratory Control Spike
CK = Check Standard
ND = Not detected = Response between 0 and 25 ppt
NQ = Not quantifiable = Response between 25 ppt and LOQ (50 ppt)

^Sample requires higher spiking level. See data set 122203A
*Sample requires dilution. See data set 122203A.

Spreadsheet prepared by: KR 12/22/03

Exygen RESEARCH
3058 Research Drive
State College, PA 16801
Phone: 814-272-1039
Fax: 814-231-1580

Internal Chain of Custody/Fortification Sheet

Exygen Study Number: L1278 Matrix: Soil
Sponsor Study/Protocol No: NA
The samples listed below were removed from refrigerator No. 32
Time 0800 Date 12/19/03 Initials CEE

CLIENT SAMPLE ID	EXYGEN ID NUMBER	WEIGHT (g)	FORTIFICATION (ng)
na	Reagent Blank	-	-
na	Reagent Spk A	-	2.0
na	Reagent Spk B	-	20.0
MW-4 (13-15)	L1278-18 Spk C	5.0	20.0
MW-6 (9-11)	L1278-29 Spk D	5.0	20.0
MW-4 (0-2)	L1278-15	5.0	-
MW-4 (3-5)	L1278-16	5.0	-
MW-4 (8-10)	L1278-17	5.0	-
MW-4 (13-15)	L1278-18	5.0	-
MW-4 (13-15)	L1278-18 Rep	5.0	-
MW-4 (18-20)	L1278-19	5.0	-
MW-4 (28-30)	L1278-20	5.0	-
MW-3 (4-6)	L1278-21	5.0	-
MW-3 (9-11)	L1278-22	5.0	-
MW-3 (14-16)	L1278-23	5.0	-
MW-3 (19-21)	L1278-24	5.0	-
MW-1 (0-2)	L1278-25	5.0	-
MW-1 (8-10)	L1278-26	5.0	-
MW-6 (0-2)	L1278-27	5.0	-
MW-6 (4-6)	L1278-28	5.0	-
MW-6 (9-11)	L1278-29	5.0	-
MW-6 (9-11)	L1278-29 Rep	5.0	-
MW-6 (14-16)	L1278-30	5.0	-
MW-6 (19-21)	L1278-31	5.0	-
MW-6 (24-26)	L1278-32	5.0	-

	Spiking Solution Used	Volume Used for Spiking	Initial/Date
Reagent Spk A	F061703-10 (10 ng/mL)	200 µL (200 µL micropipet)	KR / 12/19/03
Reagent Spk B	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KR / 12/19/03
L1278-18 Spk C	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KR / 12/19/03
L1278-29 Spk D	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KR / 12/19/03

All samples were weighed on balance No. 20
Time 0850 Date 12/19/03 Initials CEE

After weighing samples were returned to refrigerator No. 32
Time 1230 Date 12/19/03 Initials CEE

Comments: 200 µL of 250 mg/mL sodium thiosulfate was added to all samples before spiking. Initials/Date: CEE 12/19/03

Analysis Summary:
Data Set: 121903A 12/24/03 Initials/Date: KR / 12/19/03
Data Set: 122403A Initials/Date: KR / 12/24/03
Data Set: — Initials/Date: / —

Set extraction/analysis data verified by: JMF Date: 12/30/03

Exygen RESEARCH
3058 Research Drive Phone: 814-272-1039
State College, PA 16801 Fax: 814-231-1580

SAMPLE EXTRACTION AND ANALYSIS TRACKING SHEET

EXYGEN STUDY NUMBER: L1278 METHOD: 01M-008-046 Rev 1 (Modified) PROTOCOL NUMBER: NA
MATRIX: Soil ANALYTES: PFOS

Client ID	Exygen ID	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	Dilutions (mL/mL)	STEP 7	Dilutions (mL/mL)	STEP 8	Reagents/ Materials	Lot #
na	Reagent Blank							–		–	–	Methanol	43308345
na	Reagent Spk A							–		–	–	C18 SPE	W316TB2
na	Reagent Spk B							–		–	–	Type I Water	NA
MW-4 (13-15)	L1278-18 Spk C							–		–	–	-	-
MW-6 (9-11)	L1278-29 Spk D							–		–	–	-	-
MW-4 (0-2)	L1278-15							–		0.1/10		-	-
MW-4 (3-5)	L1278-16							–		①0.1/10, 0.1/1.0		-	-
MW-4 (8-10)	L1278-17							–		0.1/10		-	-
MW-4 (13-15)	L1278-18							–		0.1/10		-	-
MW-4 (13-15)	L1278-18 Rep							–		0.1/10		*Initials/Date*	CEE 12/19/03
MW-4 (18-20)	L1278-19							–		0.05/1.0		-	-
MW-4 (28-30)	L1278-20							–		0.1/1.0		-	-
MW-3 (4-6)	L1278-21							–		①0.1/10, 0.1/1.0		-	-
MW-3 (9-11)	L1278-22							–		0.1/10		-	-
MW-3 (14-16)	L1278-23							–		0.1/1.0		-	-
MW-3 (19-21)	L1278-24							–		0.1/1.0		-	-
MW-1 (0-2)	L1278-25							–		①0.1/10, 0.1/1.0		-	-
MW-1 (8-10)	L1278-26							–		0.1/10		-	-
MW-6 (0-2)	L1278-27							–		①0.1/10, 0.1/1.0		-	-
MW-6 (4-6)	L1278-28							–		①0.1/10, 0.1/1.0		-	-
MW-6 (9-11)	L1278-29							–		①0.1/10, 0.1/1.0		HPLC	
MW-6 (9-11)	L1278-29 Rep							–		①0.1/10, 0.1/1.0		Methanol	43308345
MW-6 (14-16)	L1278-30							–		①0.1/10, 0.1/1.0		Ammonium Acetate	V36159
MW-6 (19-21)	L1278-31							–		①0.1/10, 0.1/1.0		Type I water	NA
MW-6 (24-26)	L1278-32							–		0.1/10		-	-
*Initials/Date	-	CEE 12/19/03	CEE 12/19/03	CEE 12/19/03	CEE 12/19/03	CEE 12/19/03	CEE 12/19/03	–	KC 12/19/03	KC 12/22/03	KC 12/24/03	*Initials/Date*	KC 12/19/03

①DF = 1000 KC 12/22/03

STEP 1: Add 5mL of methanol and shake by hand for ~1 minute
STEP 2: Bring up to 40 mL with hypercarb filtered type I water
STEP 3: Centrifuge for 10 minutes at ~3000 rpm
STEP 4: Filter through glass acrodisc
STEP 5: SPE column clean up
STEP 6: Final volume to 5 mL collected in 15 mL polypropolene tubes
STEP 7: LC/MS/MS analysis
STEP 8: LC/MS/MS reanalysis.

Final extracts stored in refrigerator 32 Initials: CEE Date: 12/19/03

*Initials and date under each step indicates the personnel that performed this step.

000306

Exygen RESEARCH
3058 Research Drive
State College, PA 16801
Phone: 814-272-1039
Fax: 814-231-1580

Exygen STUDY NO. L1278

PREPARATION OF EXTRACTED CALIBRATION STANDARDS

Protocol No.: None
Method No.: $$
Exygen Study No.: NA
Analytes: C4,C5,C6,C7 and C8 Acids; C4, C6 & C8 Sulfonates
Matrix: Type I Water^
Sample Vol: 40 mL

Sponsor Sample ID	Exygen Sample ID	Sample Description	Fort. Solution ID	Fort. Soln. Conc. (ng/mL)	Fort. Volume (µL)	Micropipet used (µL)	Fort. Level (ppt)	Final Solution ID # **	Reagents/ Materials	Lot #
NA	0106020	Type I Water^	-	-	-	-	-	XC121603-0	Methanol	43308345
NA	0106020	Type I Water^	F061703-10	10	100	200	25	XC121603-1	C18 SPE	W322383
NA	0106020	Type I Water^	F061703-10	10	200	200	50	XC121603-2	Type I Water	NA
NA	0106020	Type I Water^	F061703-10	10	400	200	100	XC121603-3	-	-
NA	0106020	Type I Water^	F061703-9	100	100	200	250	XC121603-4	-	-
NA	0106020	Type I Water^	F061703-9	100	200	200	500	XC121603-5	-	-
NA	0106020	Type I Water^	F061703-9	100	400	200	1000	XC121603-6	-	-
-	-	-	-	-	-	-	-	-	Initials/Date:	CEE 12/16/03
-	-	-	-	-	-	-	-	-		

Vertical arrows in a column indicate identical values.

***This must be a unique number. Use this system: Extracted Calibration Soln ID #: XCMMDDYY-0,1,2,3. etc.*

Samples removed from refrigerator / freezer # 32 Time: 0730 Initials/Date: CEE /12/16/03
40 mL of each sample measured using a 50 mL graduated cylinder. Initials/Date: CEE /12/16/03
After measuring, samples returned to refrigerator / freezer # 32 Time: 1200 Initials/Date: CEE /12/16/03
Samples fortified: Initials/Date: CEE /12/16/03
SPE clean-up (omitting 40% Wash): Initials/Date: CEE /12/16/03
Final volume adjusted to 5 mL: Initials/Date: CEE /12/16/03
Extracts placed in refrigerator # 32 Initials/Date: CEE /12/16/03

"THIS IS AN EXACT COPY OF THE ORIGINAL DOCUMENT."
BY Kf DATE 12/22/03

STANDARD EXPIRATION DATE: 12/30/03

Comments: ^This type I water has been filtered through a hypercarb filter

$$ Method of Analysis for the Determination of Perfluorooctane sulfonate (PFOS), Perfluorooctane sulfonylamide (PFOSA), and Perfluorooctanoate (POAA) in Water

000307

Masslynx - Sample List

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121803A Soil.SPL
Printed: Thu Dec 18 14:49:09 2003 12/18/03

Exygen STUDY NO. L1278

Page Position: (1, 1)

	Vial	File Name	LIMS ID	Client ID	Sample Description	Matrix	Sample Type	Conc (ng/L)	Conc B	Conc C	Test ID	DF	MS Method
1	1	121803A-101	---	---	XC121603-0, 0 ng/L standard	---	Blank	0	---	---	0	1	PFOS
2	2	121803A-102	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
3	3	121803A-103	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
4	4	121803A-104	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
5	5	121803A-105	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
6	6	121803A-106	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
7	7	121803A-107	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS
8	92	121803A-108	---	---	Methanol Wash	---	Blank	---	---	---	0	1	PFOS
9	51	121803A-109	---	---	Reagent Blank	---	Blank	---	---	---	0	1	PFOS
10	52	121803A-110	---	---	Reagent Spk A, 50 ng/L	---	QC	50	---	---	0	1	PFOS
11	53	121803A-111	---	---	Reagent Spk B, 500 ng/L	---	QC	500	---	---	0	1	PFOS
12	54	121803A-112	---	---	L1278-1 Spk C, 500 ng/L	---	QC	500	---	---	0	1	PFOS
13	55	121803A-113	---	---	L1278-14 Spk D, 500 ng/L	---	QC	500	---	---	0	1	PFOS
14	2	121803A-114	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
15	3	121803A-115	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
16	56	121803A-116	---	---	L1278-1	---	Analyte	---	---	---	0	1	PFOS
17	57	121803A-117	---	---	L1278-1 Rep	---	Analyte	---	---	---	0	1	PFOS
18	58	121803A-118	---	---	L1278-2	---	Analyte	---	---	---	0	1	PFOS
19	59	121803A-119	---	---	L1278-3	---	Analyte	---	---	---	0	1	PFOS
20	60	121803A-120	---	---	L1278-4	---	Analyte	---	---	---	0	1	PFOS
21	61	121803A-121	---	---	L1278-5	---	Analyte	---	---	---	0	1	PFOS
22	4	121803A-122	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
23	62	121803A-123	---	---	L1278-6	---	Analyte	---	---	---	0	1	PFOS
24	63	121803A-124	---	---	L1278-7	---	Analyte	---	---	---	0	1	PFOS
25	64	121803A-125	---	---	L1278-8	---	Analyte	---	---	---	0	1	PFOS
26	65	121803A-126	---	---	L1278-9	---	Analyte	---	---	---	0	1	PFOS
27	66	121803A-127	---	---	L1278-10	---	Analyte	---	---	---	0	1	PFOS
28	5	121803A-128	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
29	67	121803A-129	---	---	L1278-11	---	Analyte	---	---	---	0	1	PFOS
30	68	121803A-130	---	---	L1278-12	---	Analyte	---	---	---	0	1	PFOS
31	69	121803A-131	---	---	L1278-13	---	Analyte	---	---	---	0	1	PFOS
32	70	121803A-132	---	---	L1278-14	---	Analyte	---	---	---	0	1	PFOS
33	71	121803A-133	---	---	L1278-14 Rep	---	Analyte	---	---	---	0	1	PFOS
34	6	121803A-134	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
35	7	121803A-135	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS

000308

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121803A Soil.SPL
Printed: Thu Dec 18 14:49:09 2003 KG 12/18/03

Exygen STUDY NO. 41278

Page Position: (2, 1)

	HPLC Method	MS Tune File	Inj.Volume
1	PFOSand PFOA	Fluorochems	15
2	PFOSand PFOA	Fluorochems	15
3	PFOSand PFOA	Fluorochems	15
4	PFOSand PFOA	Fluorochems	15
5	PFOSand PFOA	Fluorochems	15
6	PFOSand PFOA	Fluorochems	15
7	PFOSand PFOA	Fluorochems	15
8	PFOSand PFOA	Fluorochems	15
9	PFOSand PFOA	Fluorochems	15
10	PFOSand PFOA	Fluorochems	15
11	PFOSand PFOA	Fluorochems	15
12	PFOSand PFOA	Fluorochems	15
13	PFOSand PFOA	Fluorochems	15
14	PFOSand PFOA	Fluorochems	15
15	PFOSand PFOA	Fluorochems	15
16	PFOSand PFOA	Fluorochems	15
17	PFOSand PFOA	Fluorochems	15
18	PFOSand PFOA	Fluorochems	15
19	PFOSand PFOA	Fluorochems	15
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23	PFOSand PFOA	Fluorochems	15
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31	PFOSand PFOA	Fluorochems	15
32	PFOSand PFOA	Fluorochems	15
33	PFOSand PFOA	Fluorochems	15
34	PFOSand PFOA	Fluorochems	15
35	PFOSand PFOA	Fluorochems	15

LC/MS/MS SYSTEM AND OPERATING CONDITIONS

Sponsor Protocol No: NA | Exygen Study No: L1278

Instrument:	Micromass Quattro Ultima (LC/MS/MS Unit #6)
Computer:	COMPAQ Professional Workstation AP200
Software:	Microsoft Windows NT: Version 4 Build 1381: Service Pack 5 Micromass Limited: MassLynx 3.4 Build 004
HPLC Equipment:	Hewlett Packard (HP) Series 1100 HP Bin Pump — HP Vacuum Degasser HP Autosampler — HP Column Oven
HPLC Column:	Genesis C-8, 5 cm x 2.1 mm i.d. x 4 μ (Exygen ID: 74A) (JONESCHROMATOGRAPHY: Part No. FK5962E)
Mobile Phase (A) :	2 mM Ammonium Acetate in Type I Water
Mobile Phase (B) :	Methanol
Analyst:	Karen Risha Exygen Research 3058 Research Drive, State College, PA 16801 Phone: (814) 272-1039 FAX: (814) 231-1580

KR 12/18/03

NOTE: The next 3 pages are computer generated printouts from the masslynx software program. The pages contain the instrument settings used for the analysis of this data set.

All Handwritten Peak ID's by: KR 12/22/03

Scanning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\PFOS
Last Modified: Thu Dec 18 14:43:11 2003

Printed: Thu Dec 18 14:45:23 2003

12/18/03

Solvent Delay (mins) : 0.00

Analog Channel 4 : Unused
Function : 1 MRM of 1 Mass Pair (ESP-)

Inter Channel Delay (Secs) : 0.03
Span (Daltons) : 0.00
Start Time (Mins) : 0.00
End Time (Mins) : 8.00
Repeats : 1

Channel	Parent	Daughter	Dwell (Secs)	Coll Energy (eV)	Cone (V)
1	499.00	99.00	0.20	40	30

Method File: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\PFOSand PFOA
Last Modified: Thursday, December 18, 2003 14:43:32

Printed: Thursday, December 18, 2003 14:45:33 12/18/03

HP1100 LC Pump Initial Conditions

Solvents	
A%	60.0
B%	40.0
C%	0.0
D%	0.0
Flow (ml/min)	0.300
Stop Time (mins)	14.0
Min Pressure (bar)	0
Max Pressure (bar)	400
Oven Temperature Left(°C)	35.0
Oven Temperature Right(°C)	35.0

HP1100 LC Pump Gradient Timetable

The gradient Timetable contains 9 entries which are :

Time	A%	B%	C%	D%	Flow	Pressure
0.00	60.0	40.0	0.0	0.0	0.300	400
0.40	60.0	40.0	0.0	0.0	0.300	400
1.00	10.0	90.0	0.0	0.0	0.300	400
7.00	10.0	90.0	0.0	0.0	0.300	400
7.50	0.0	100.0	0.0	0.0	0.300	400
9.00	0.0	100.0	0.0	0.0	0.400	400
9.50	60.0	40.0	0.0	0.0	0.400	400
13.50	60.0	40.0	0.0	0.0	0.400	400
14.00	60.0	40.0	0.0	0.0	0.300	400

HP1100 LC Pump External Event Timetable

The Timetable contains 6 entries which are :

Time	Column Switch	Contact1	Contact2	Contact3	Contact4
Initial	Off	Off	Off	Off	Off
0.00	Off	On	Off	Off	Off
0.05	Off	Off	Off	Off	Off
0.10	Off	Off	On	Off	Off
7.95	Off	Off	Off	On	Off
8.00	Off	Off	Off	Off	Off

HP1100 Autosampler Initial Conditions

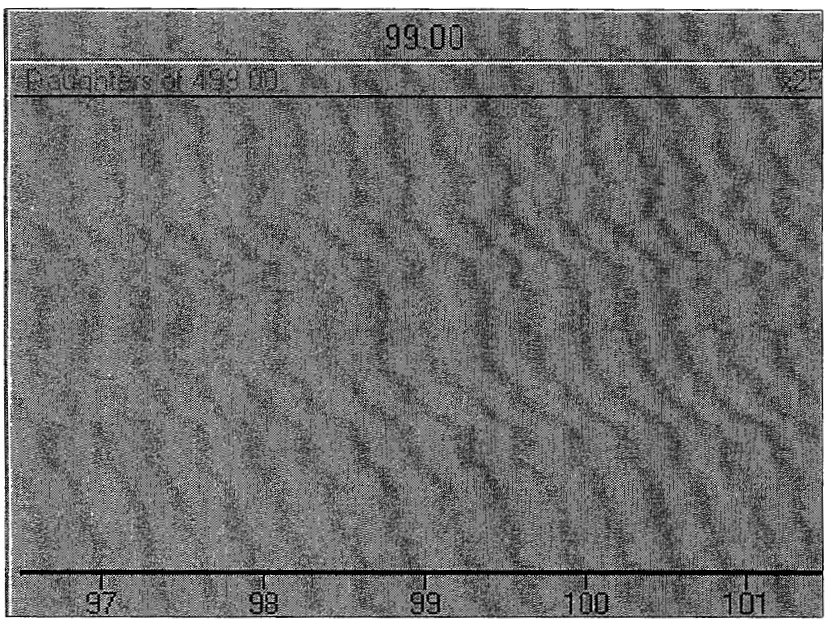
Draw Speed	200.0
Eject Speed (µl/min)	200
Draw Position (mm)	0.50
Stop Time (mins)	14.00
Injection Volume(µl)	15.0
Vial Number	7

Tuning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\FLUOROCHEMS

Printed: Thu Dec 18 14:46:01 2003

KR 12/18/03



Dau 499.00

SOURCE (ESP-)	Set	Rdbk	Analyser	Set	Rdbk
Capillary	3.00	-2.93	LM Res 1	14.0	
Cone	20	-46	HM Res 1	14.0	
Hexapole 1	0.0		IEnergy 1	1.0	
Aperture 1	0.0		Entrance	-2	26
Hexapole 2	0.0		Collision	15	33
Source Block Temp.	100	100	Exit	2	30
Desolvation Temp.	300	299	LM Res 2	14.0	
			HM Res 2	14.0	
			IEnergy 2	2.0	
			Multiplier	650	-648

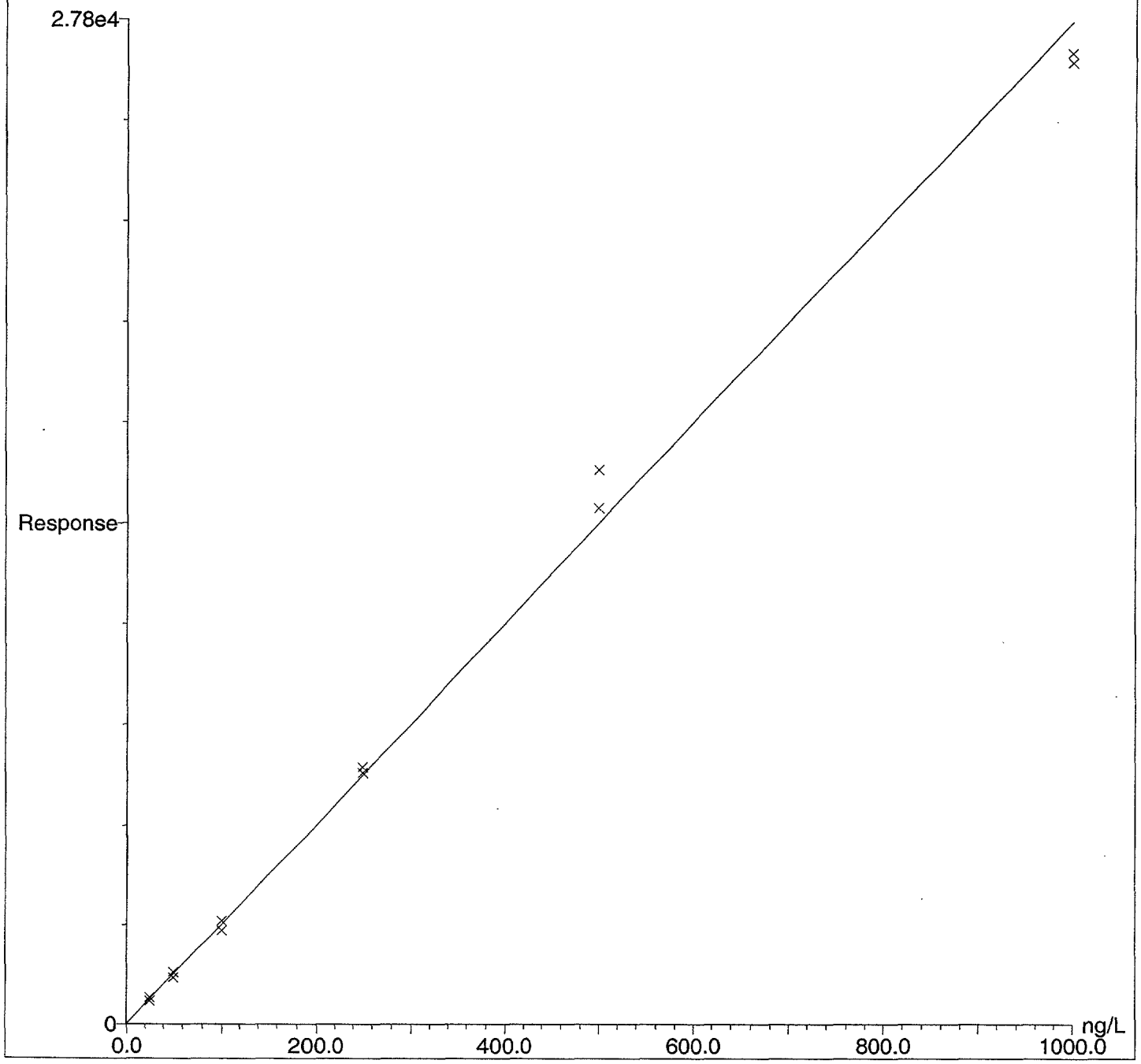
Pressures	Rdbk	Gas Flows	Rdbk
Analyser Vacuum	OFF	Cone Gas	130.7
Gas Cell	3.1e-3	Desolvation	752.7

Quantify Calibration Report
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Calibration: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\CurveDB\121803A Soil
Last modified: Mon Dec 22 07:52:52 2003
Printed: Mon Dec 22 07:54:15 2003

kf 12/22/03

Compound 1 name: C8 Sulfonate (PFOS)
Coefficient of Determination: 0.995722
Calibration curve: 27.7786 * x + 11.5876
Response type: External Std, Area
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

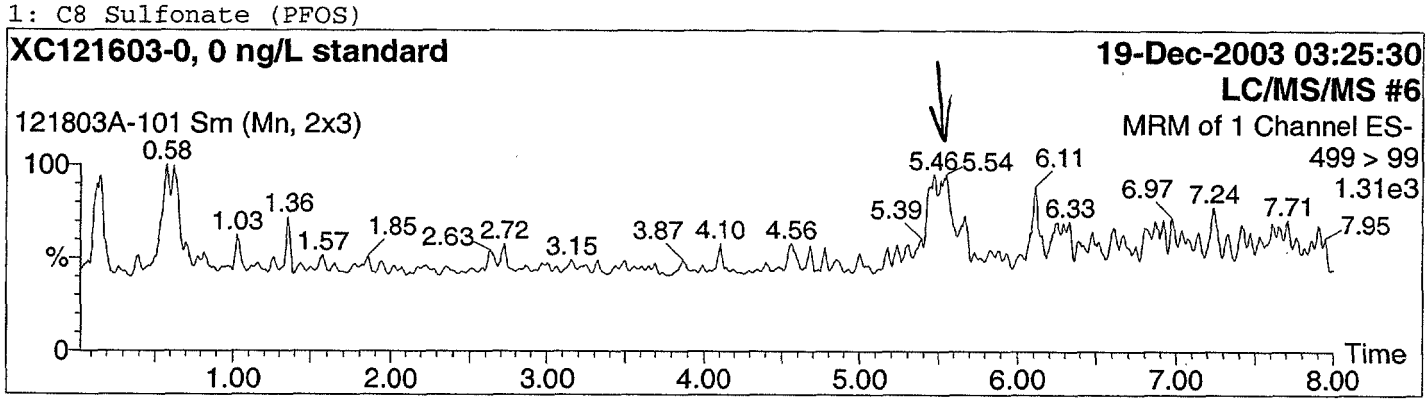
Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Initials KJ
Date 12/22/03
Run# 121803A-101 To 121803A-135

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-101
Text:

1: C8 Sulfonate (PFOS)



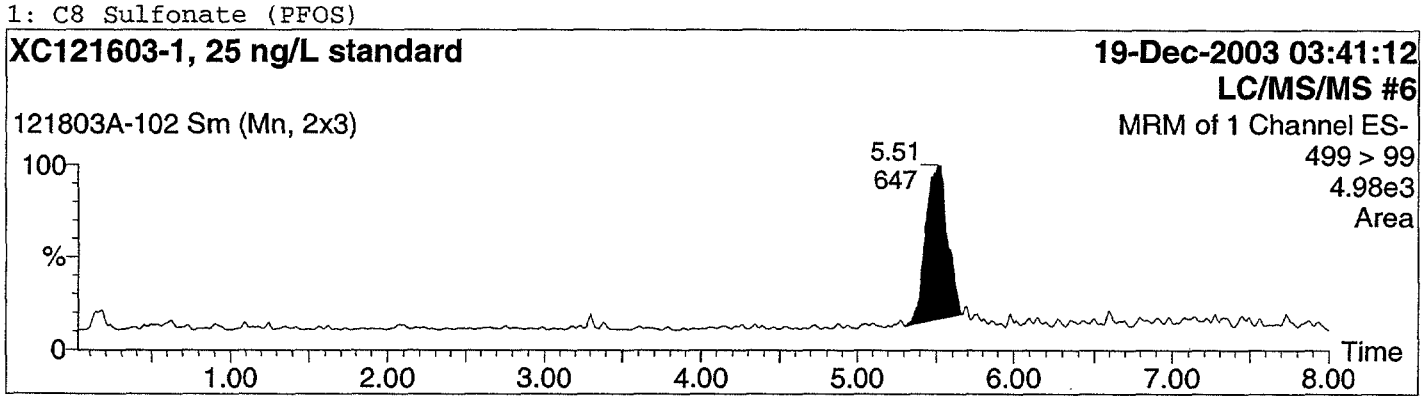
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-102
Text:

1: C8 Sulfonate (PFOS)



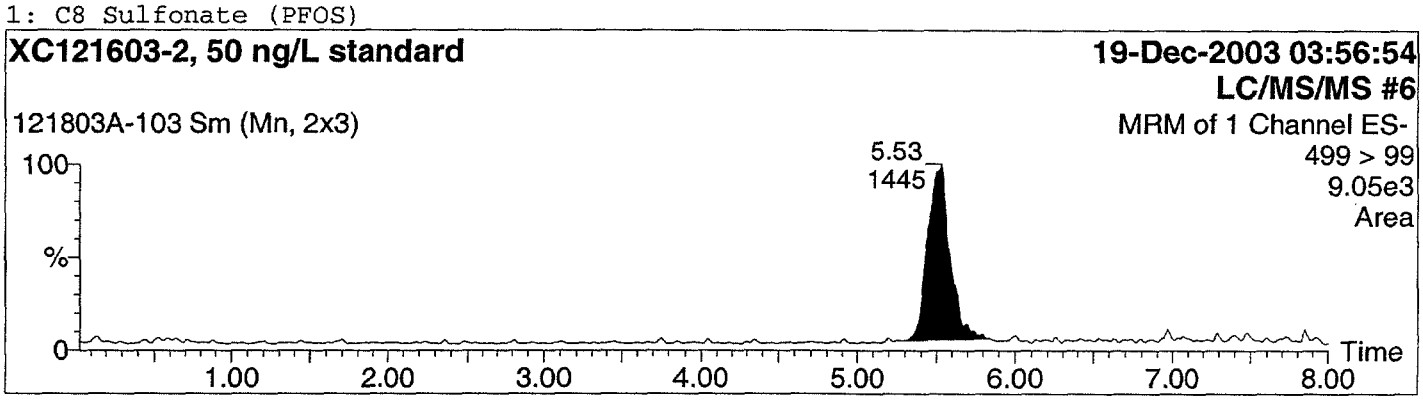
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-103
Text:

1: C8 Sulfonate (PFOS)



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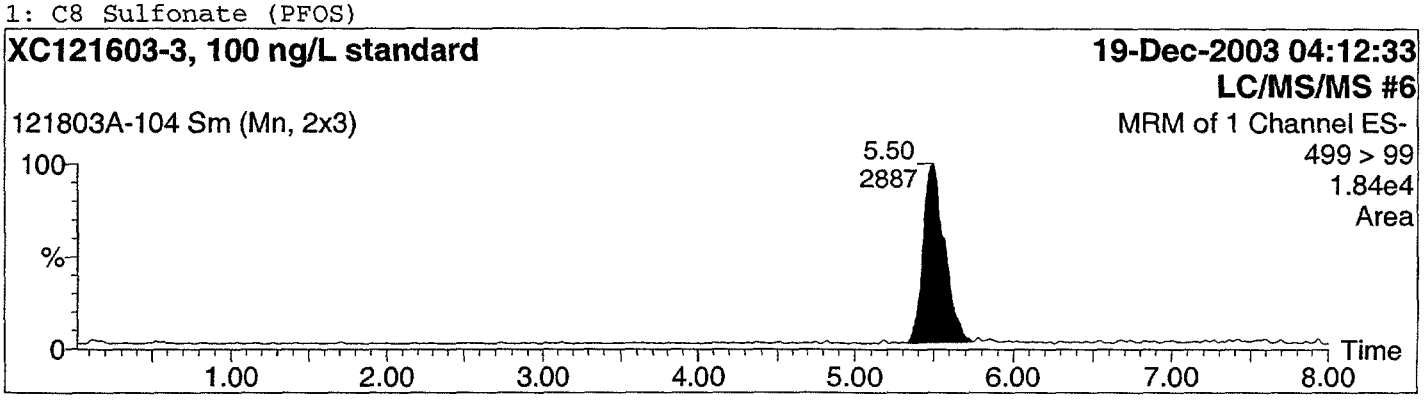
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-104
Text:

1: C8 Sulfonate (PFOS)

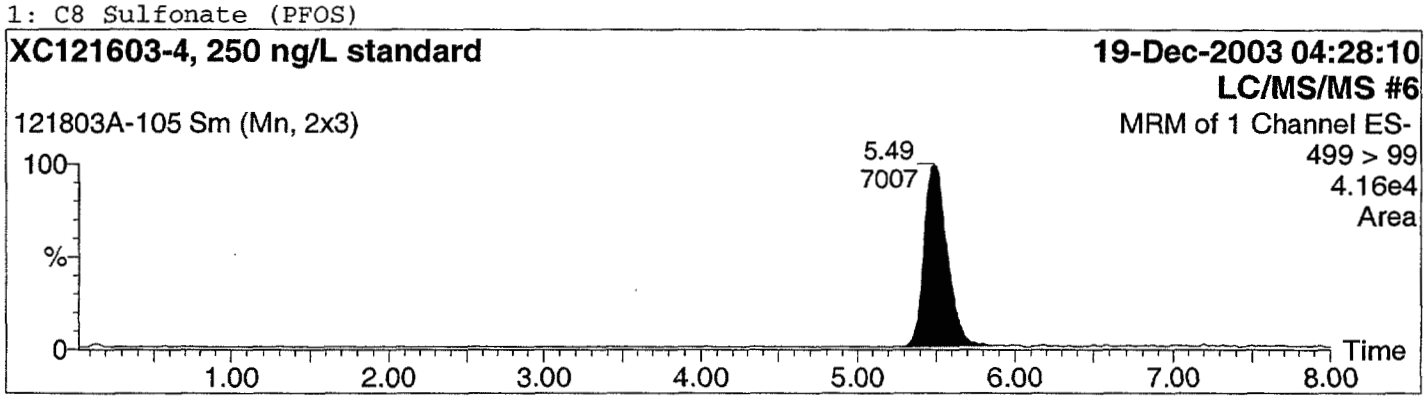


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-105
Text:

1: C8 Sulfonate (PFOS)



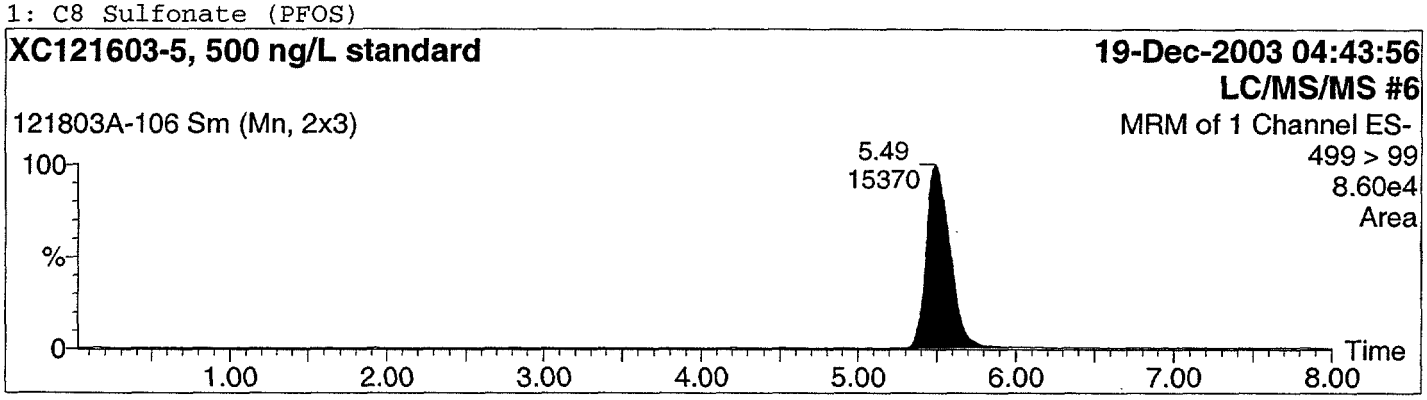
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-106
Text:

1: C8 Sulfonate (PFOS)



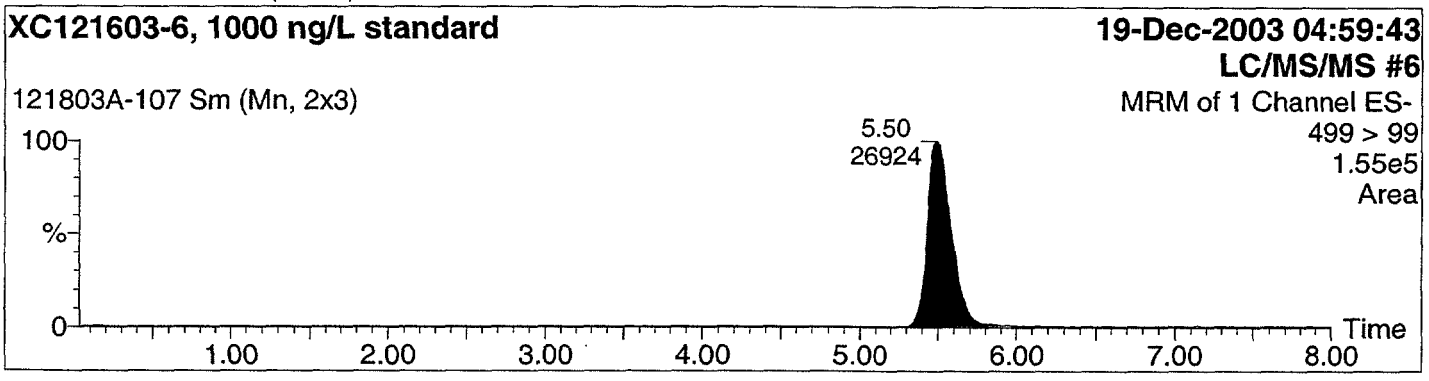
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-107
Text:

1: C8 Sulfonate (PFOS)

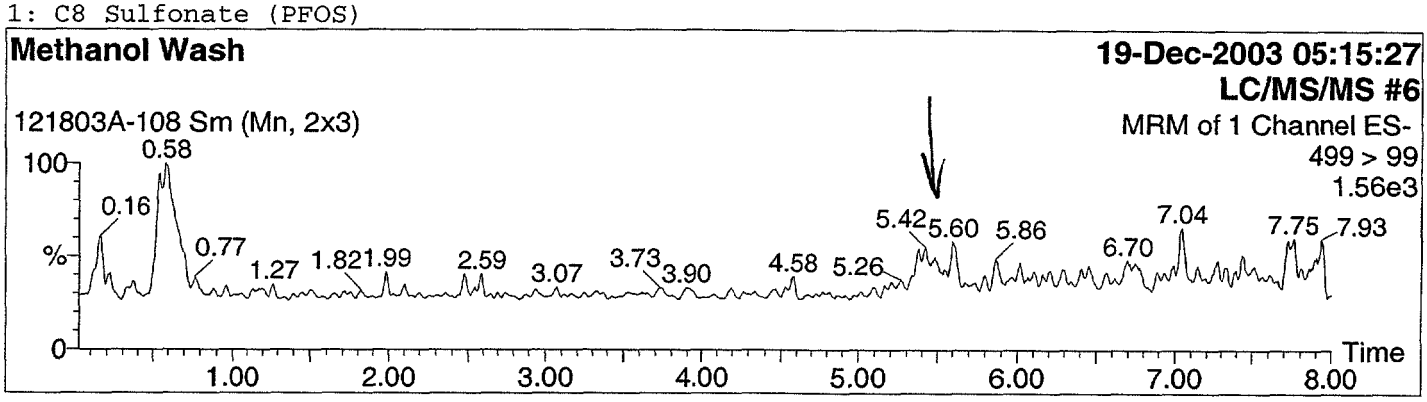


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-108
Text:

1: C8 Sulfonate (PFOS)



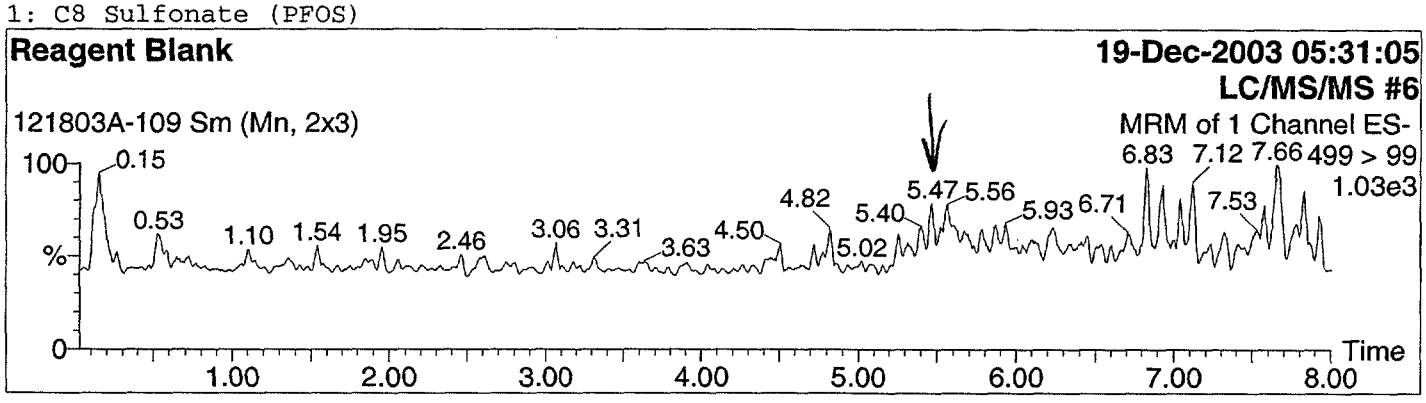
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-109
Text:

1: C8 Sulfonate (PFOS)

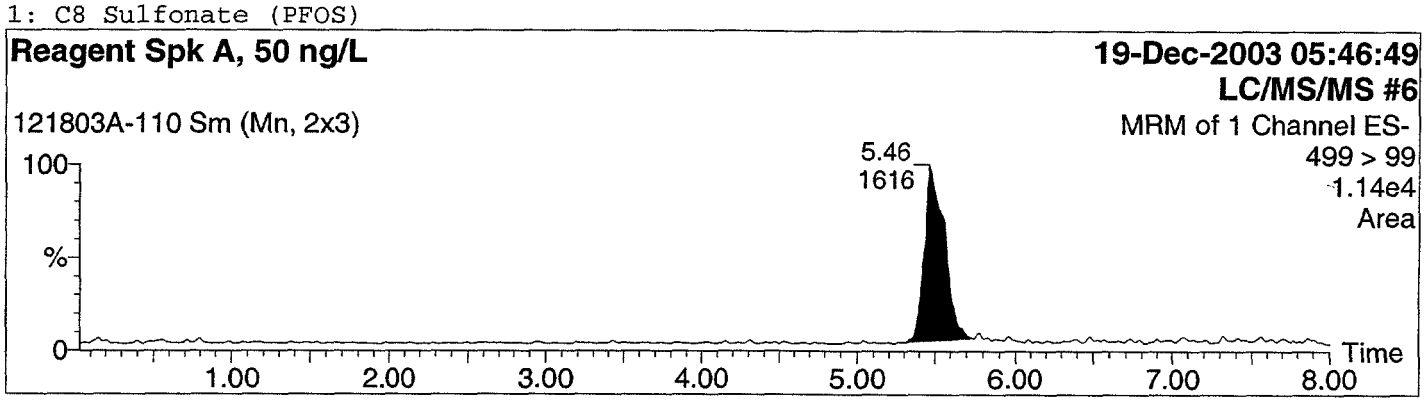


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-110
Text:

1: C8 Sulfonate (PFOS)

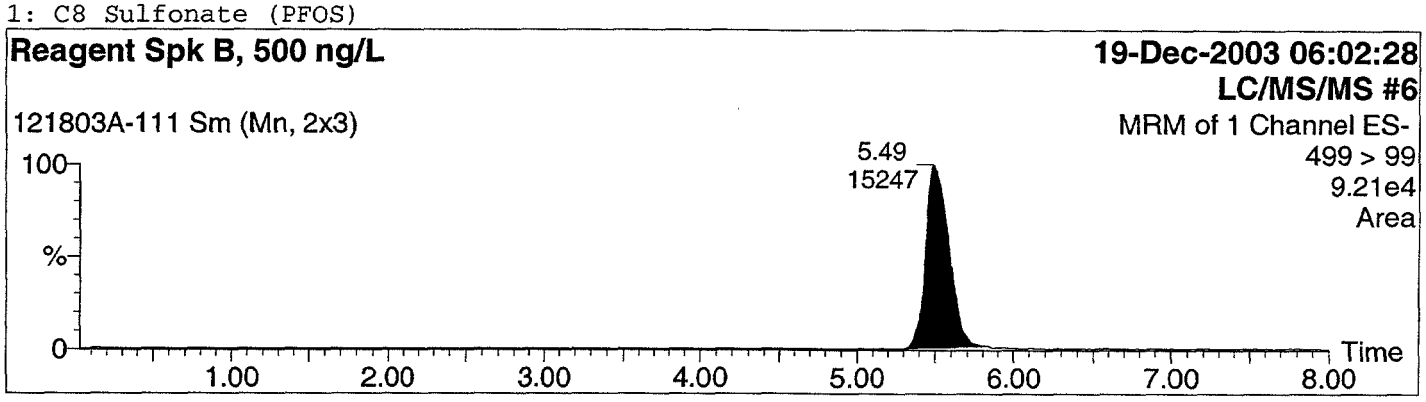


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-111
Text:

1: C8 Sulfonate (PFOS)



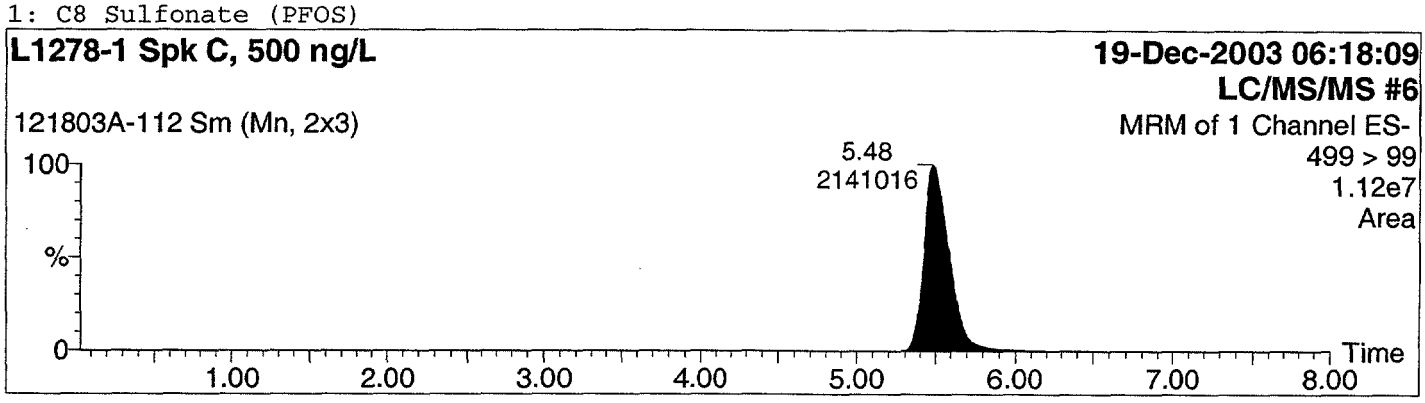
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-112
Text:

1: C8 Sulfonate (PFOS)



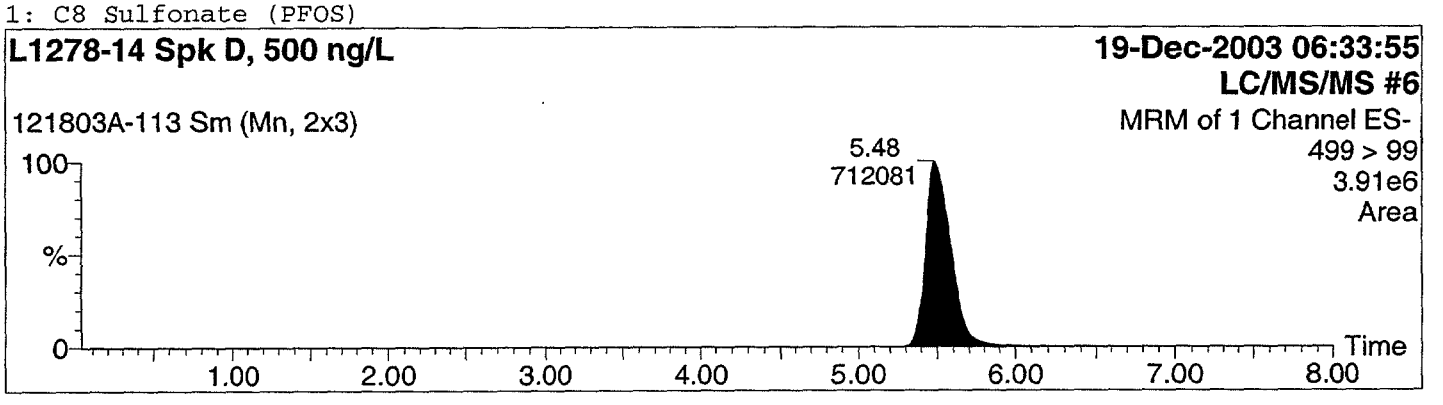
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-113
Text:

1: C8 Sulfonate (PFOS)



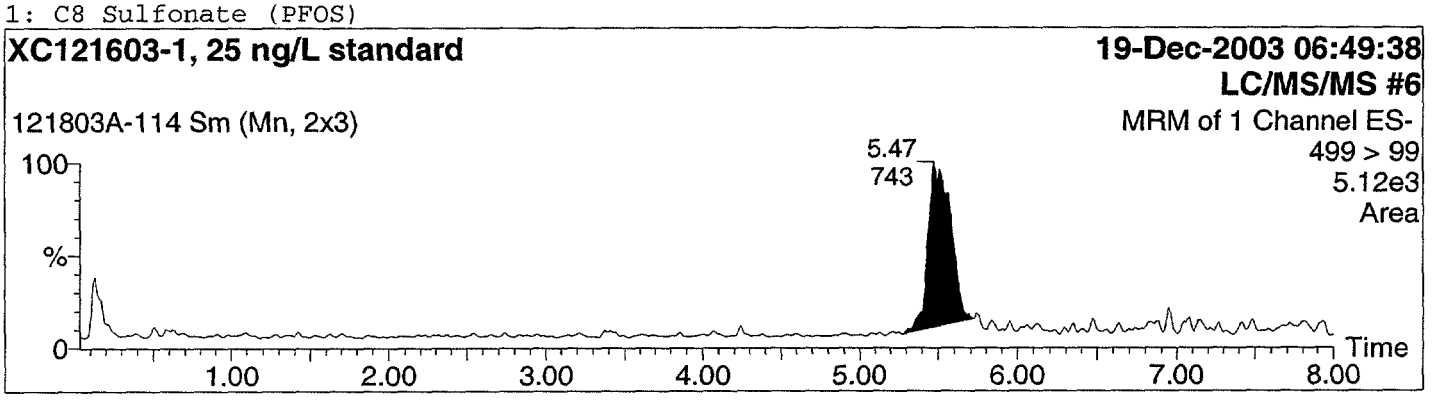
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-114
Text:

1: C8 Sulfonate (PFOS)



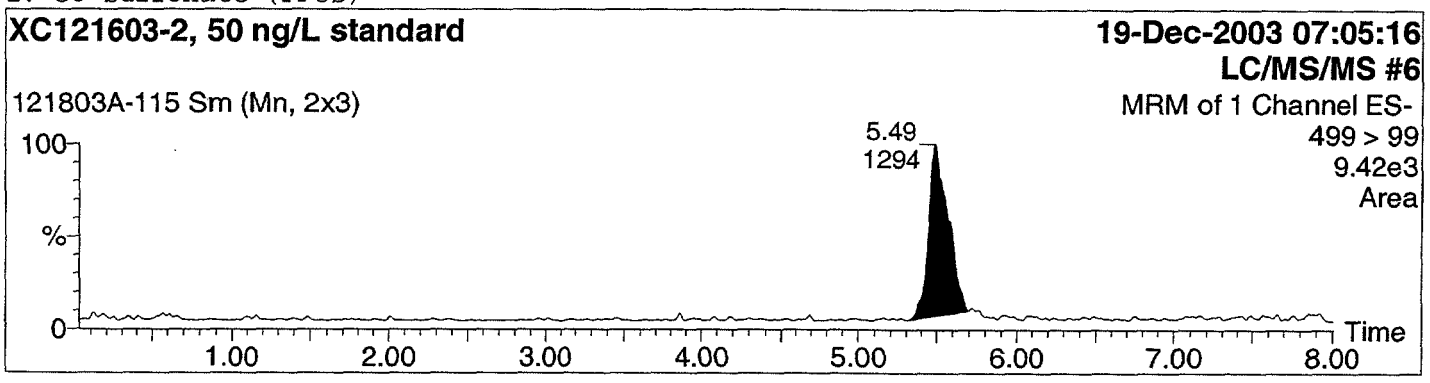
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-115
Text:

1: C8 Sulfonate (PFOS)



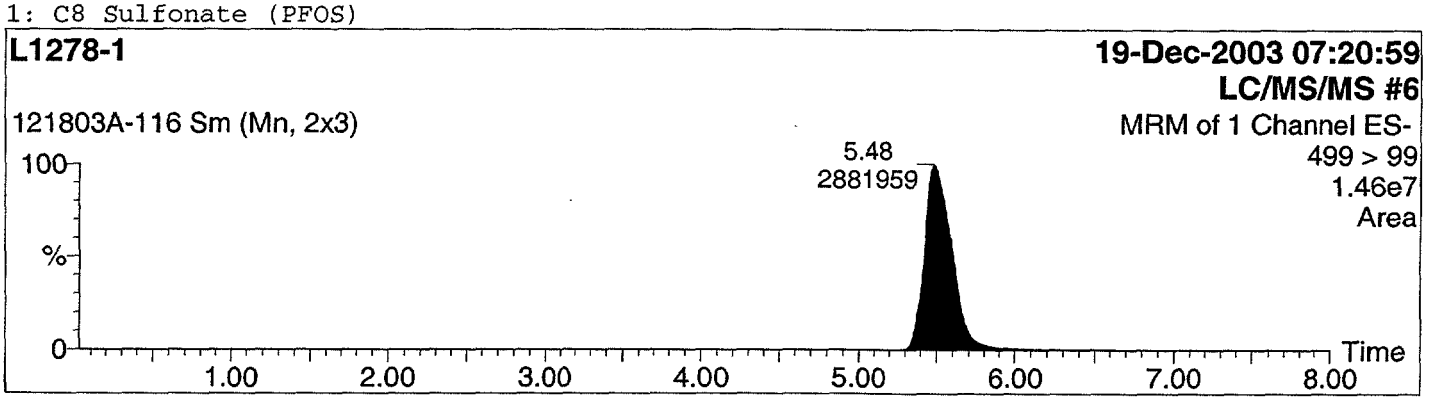
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-116
Text:

1: C8 Sulfonate (PFOS)

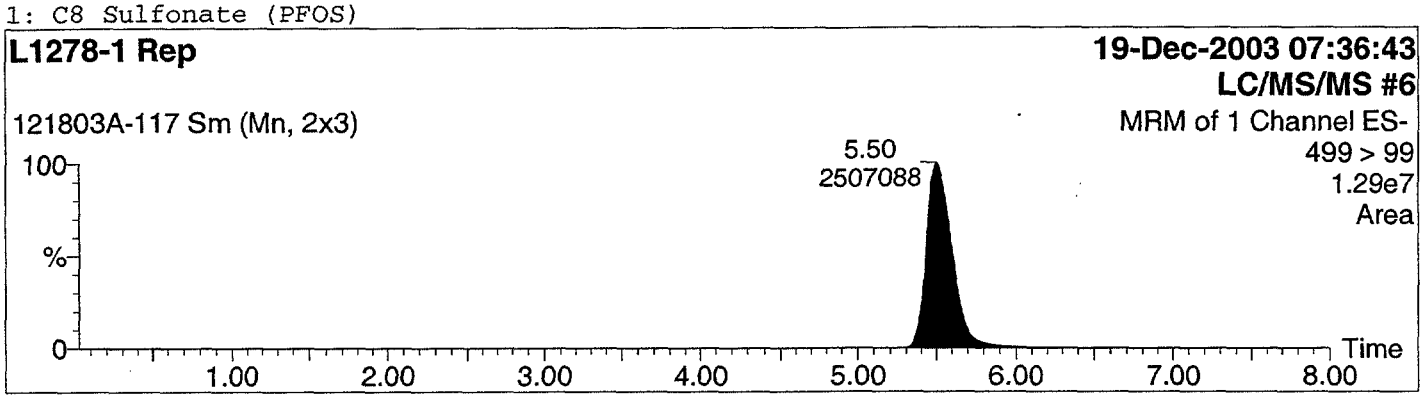


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-117
Text:

1: C8 Sulfonate (PFOS)



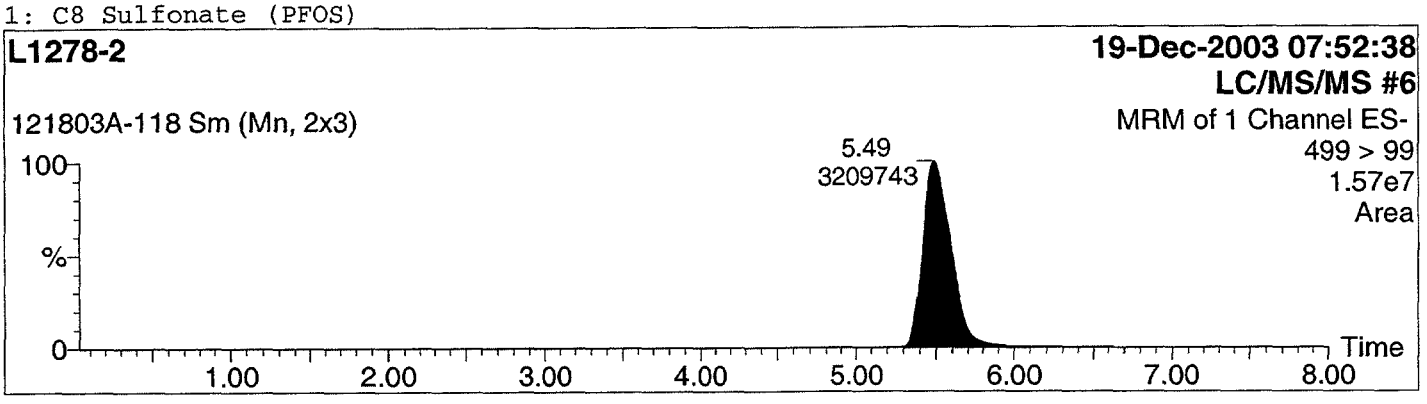
Quantify Sample Report
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-118
Text:

1: C8 Sulfonate (PFOS)

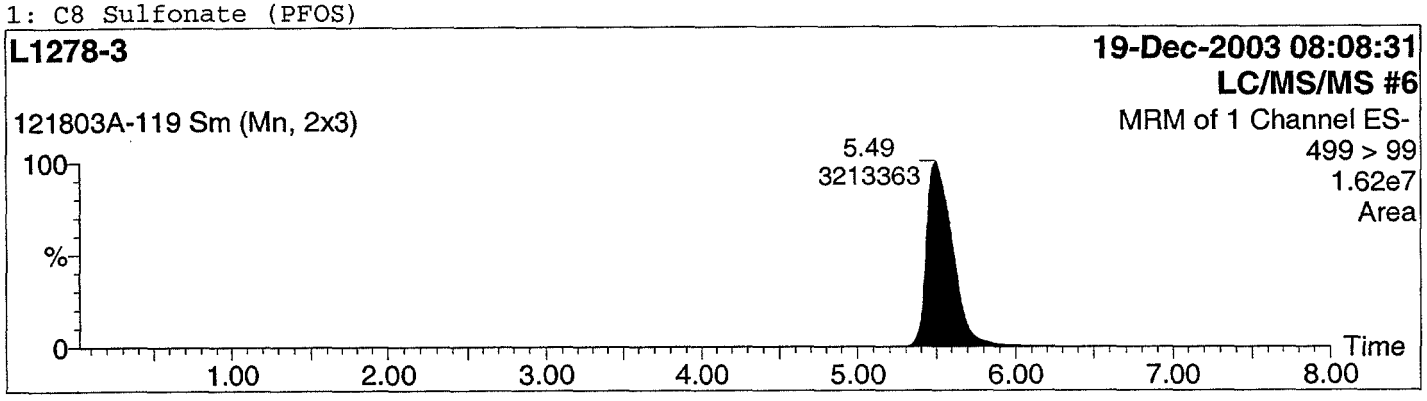


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-119
Text:

1: C8 Sulfonate (PFOS)



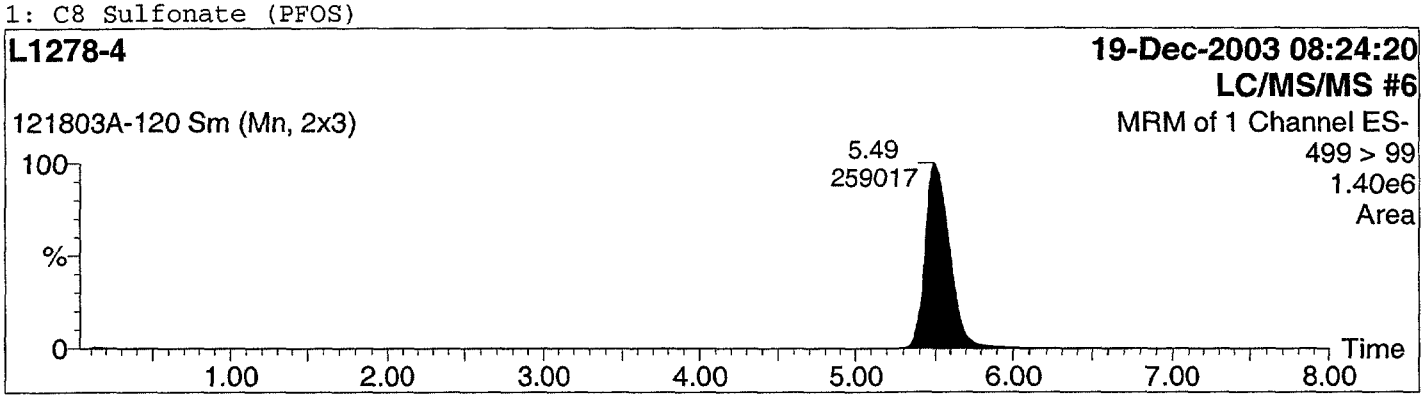
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-120
Text:

1: C8 Sulfonate (PFOS)



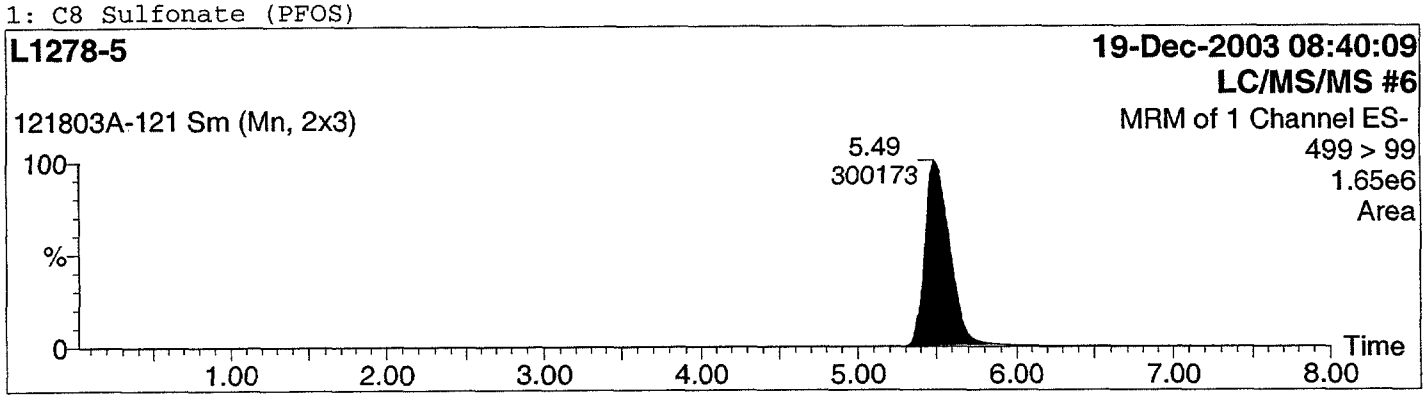
Quantify Sample Report
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-121
Text:

1: C8 Sulfonate (PFOS)



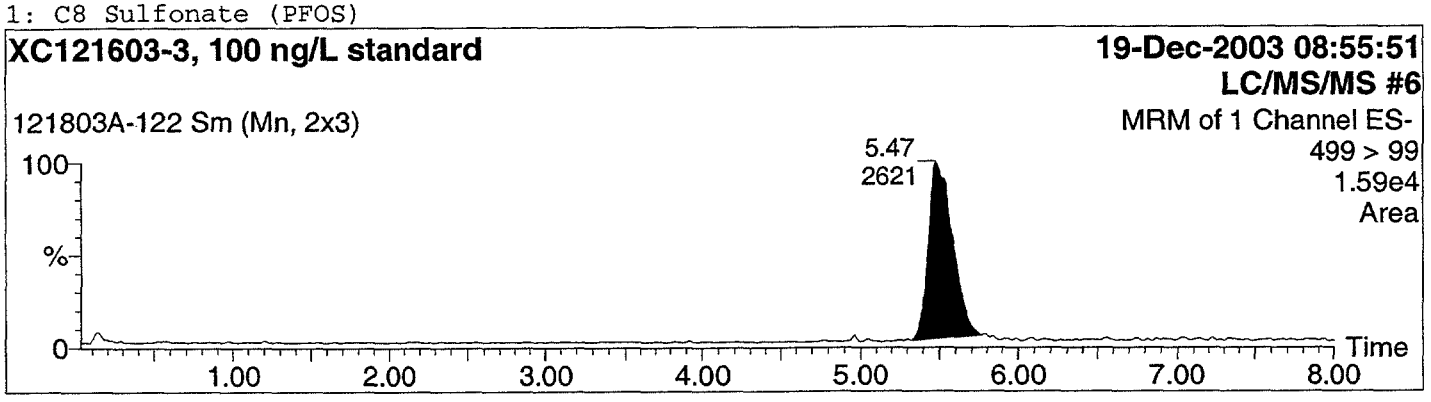
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-122
Text:

1: C8 Sulfonate (PFOS)



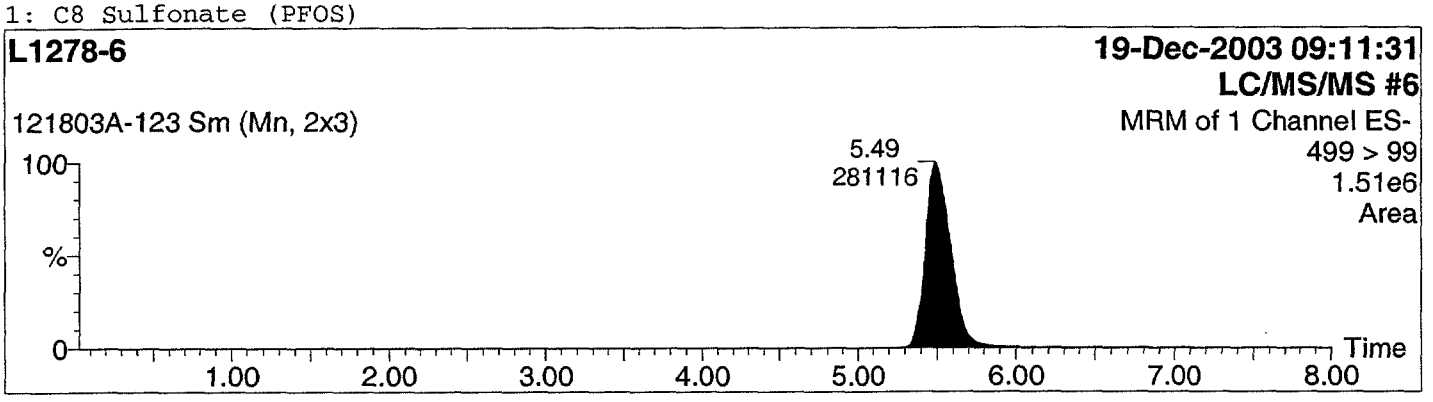
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-123
Text:

1: C8 Sulfonate (PFOS)



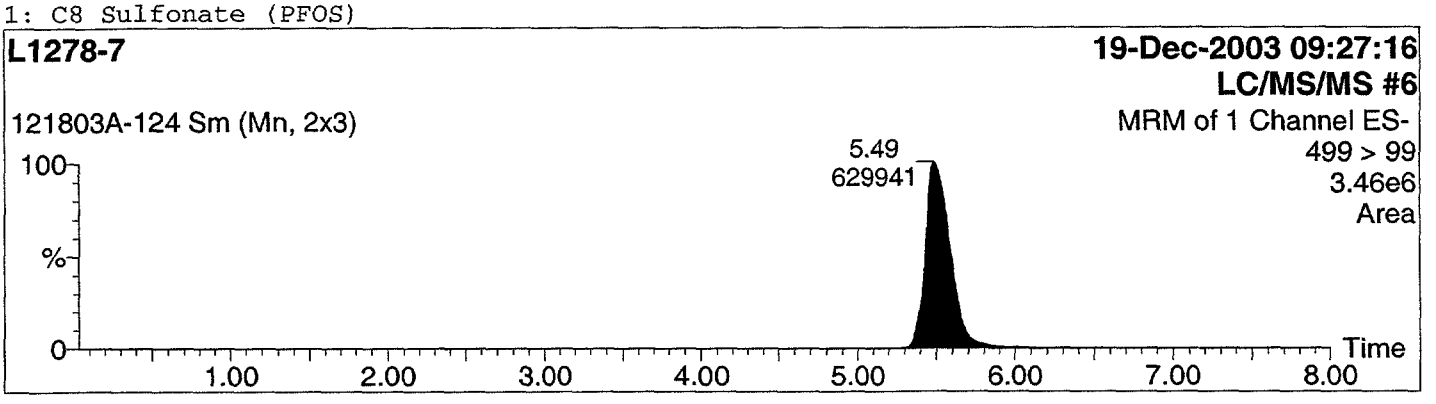
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-124
Text:

1: C8 Sulfonate (PFOS)

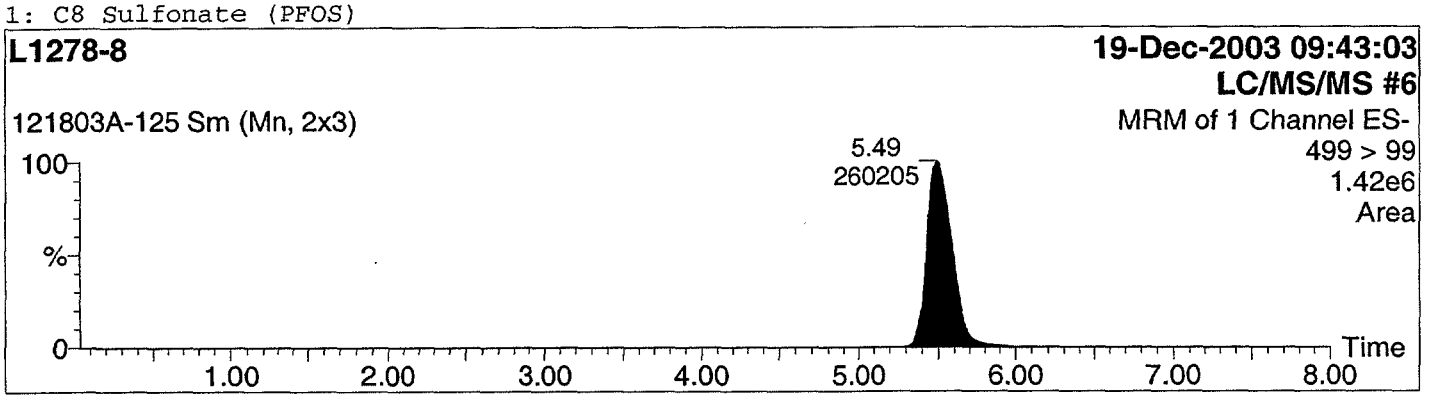


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-125
Text:

1: C8 Sulfonate (PFOS)



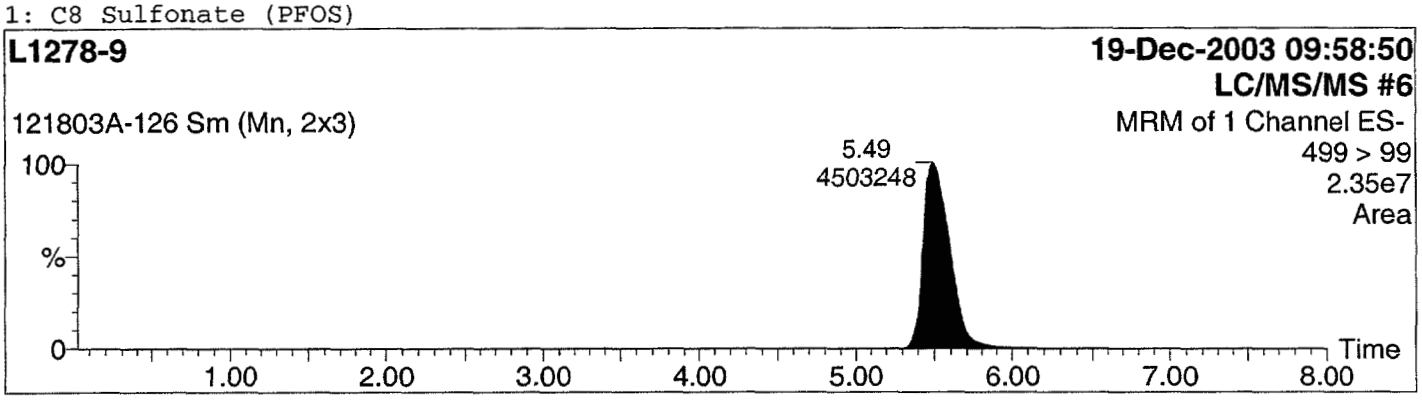
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-126
Text:

1: C8 Sulfonate (PFOS)

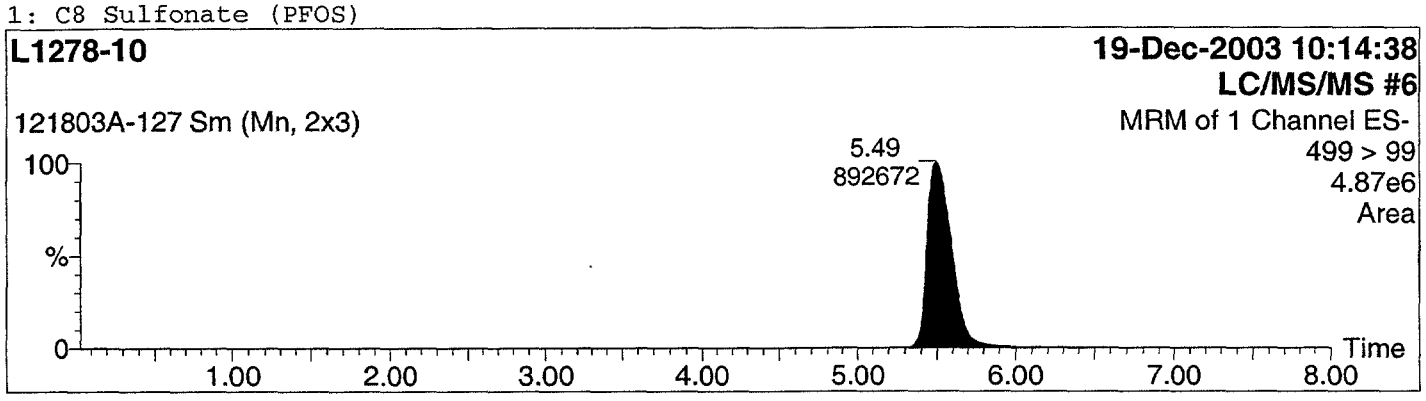


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-127
Text:

1: C8 Sulfonate (PFOS)

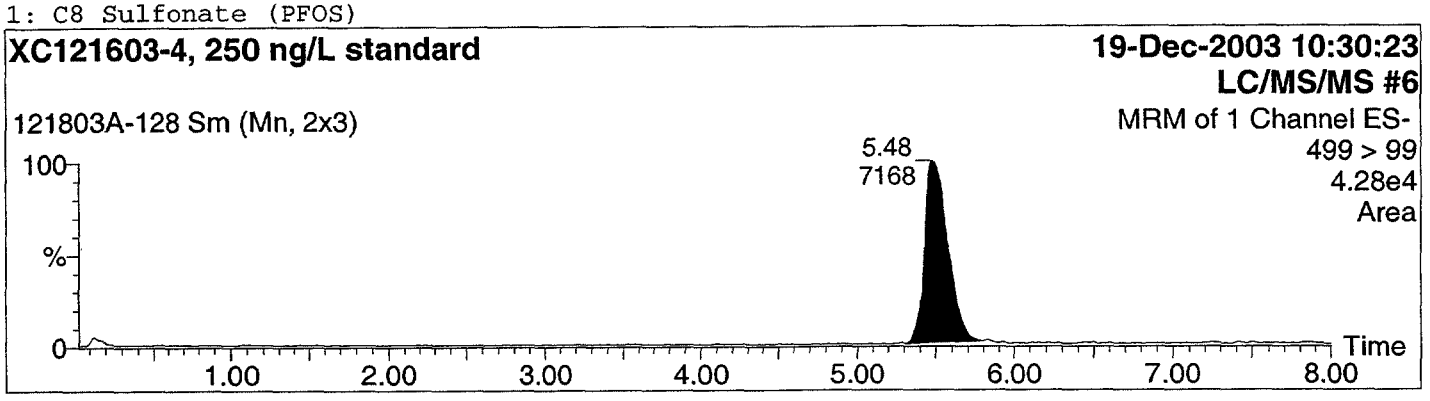


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-128
Text:

1: C8 Sulfonate (PFOS)



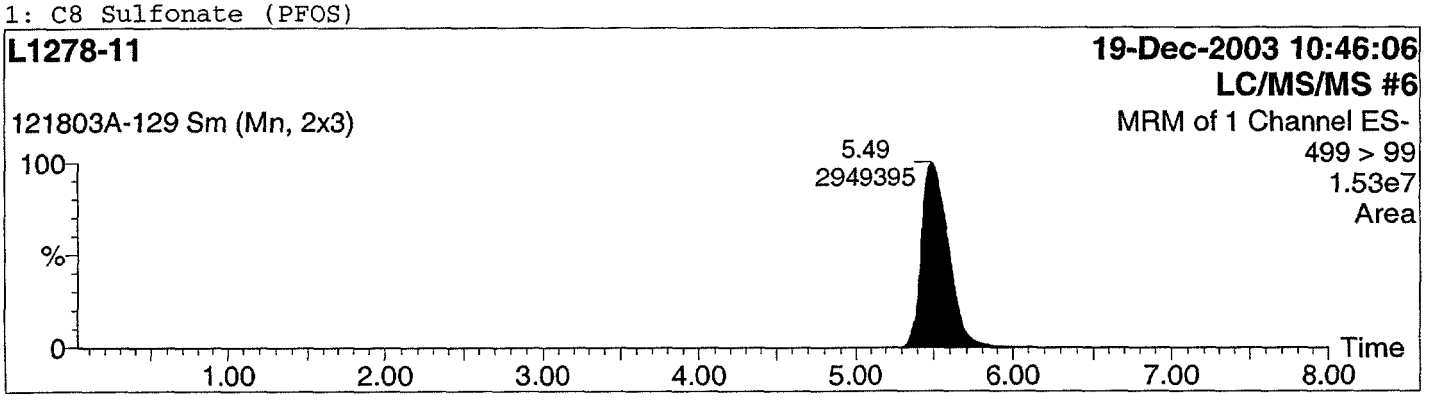
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-129
Text:

1: C8 Sulfonate (PFOS)

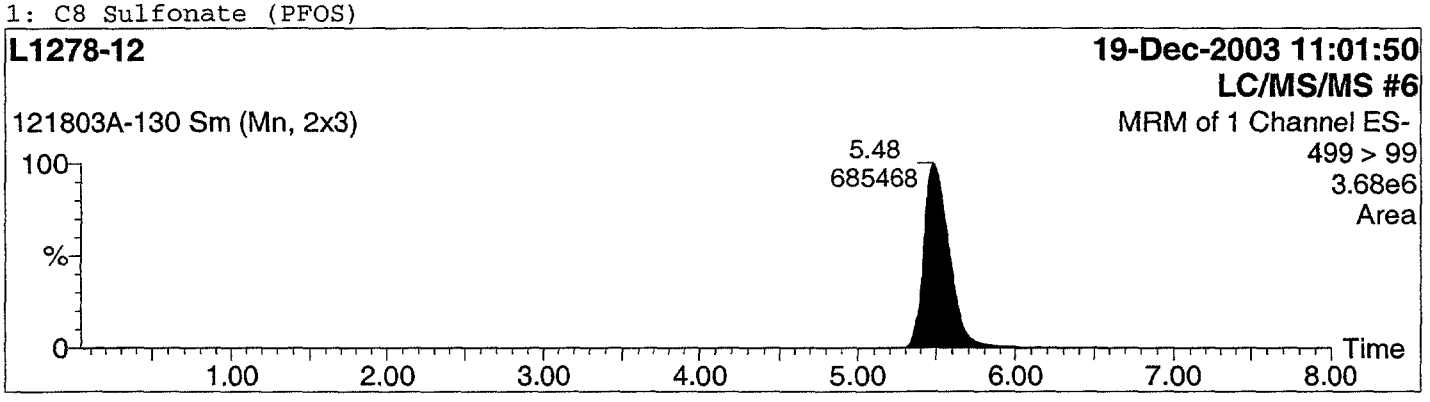


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-130
Text:

1: C8 Sulfonate (PFOS)

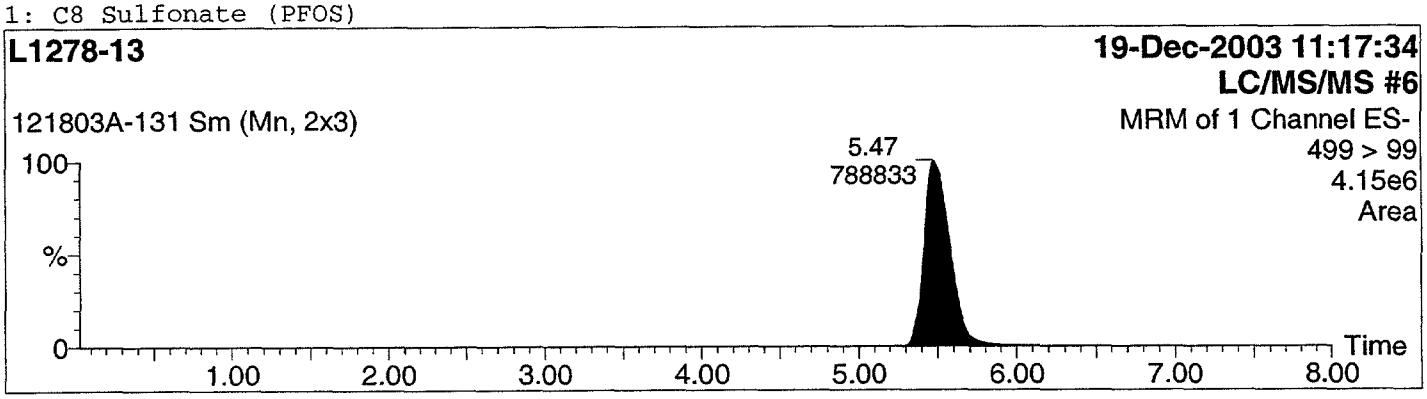


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-131
Text:

1: C8 Sulfonate (PFOS)



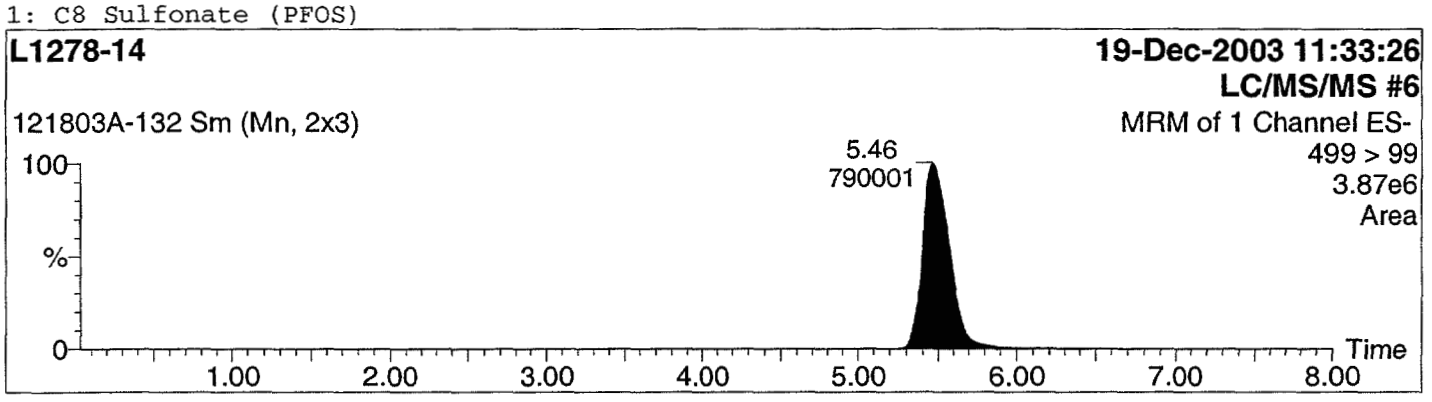
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-132
Text:

1: C8 Sulfonate (PFOS)

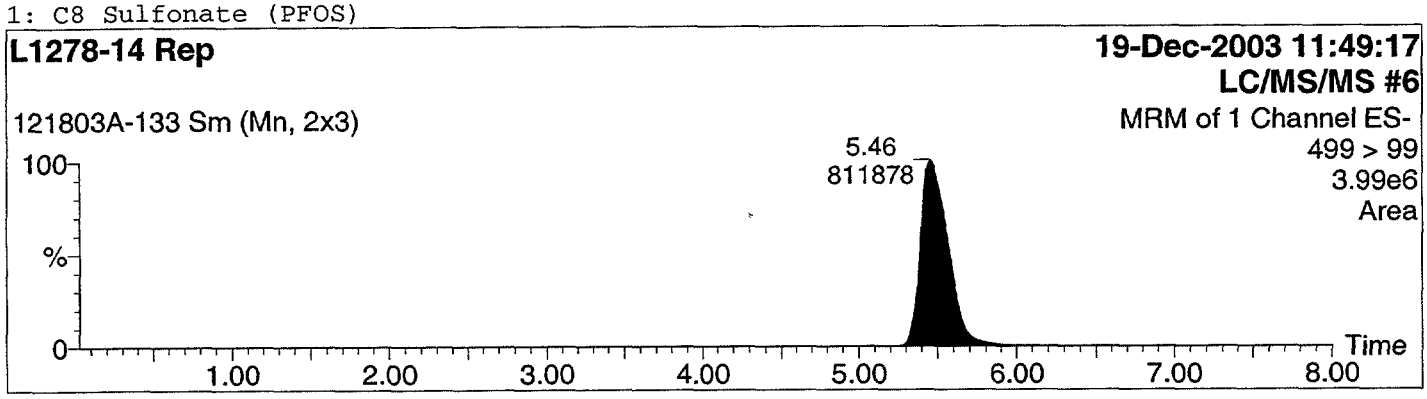


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-133
Text:

1: C8 Sulfonate (PFOS)



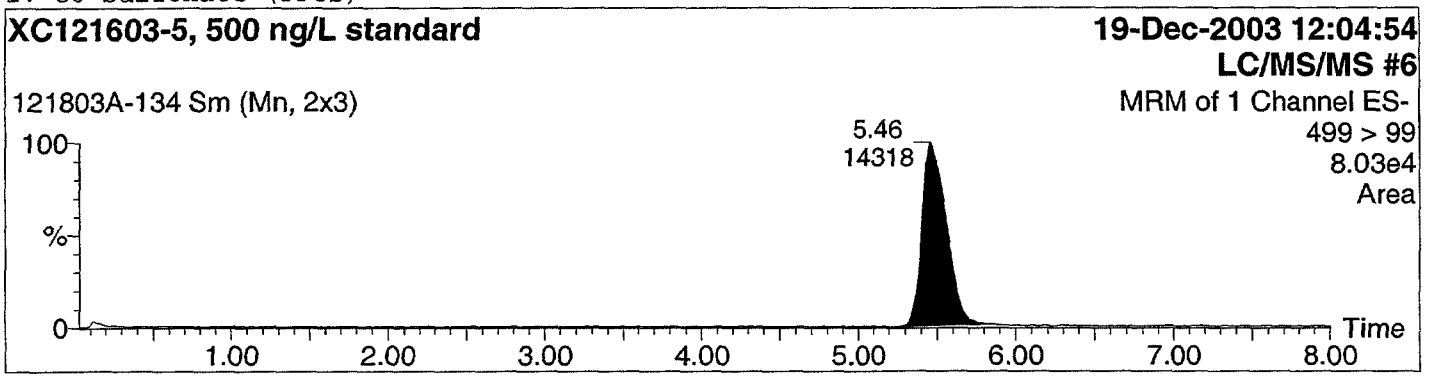
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-134
Text:

1: C8 Sulfonate (PFOS)



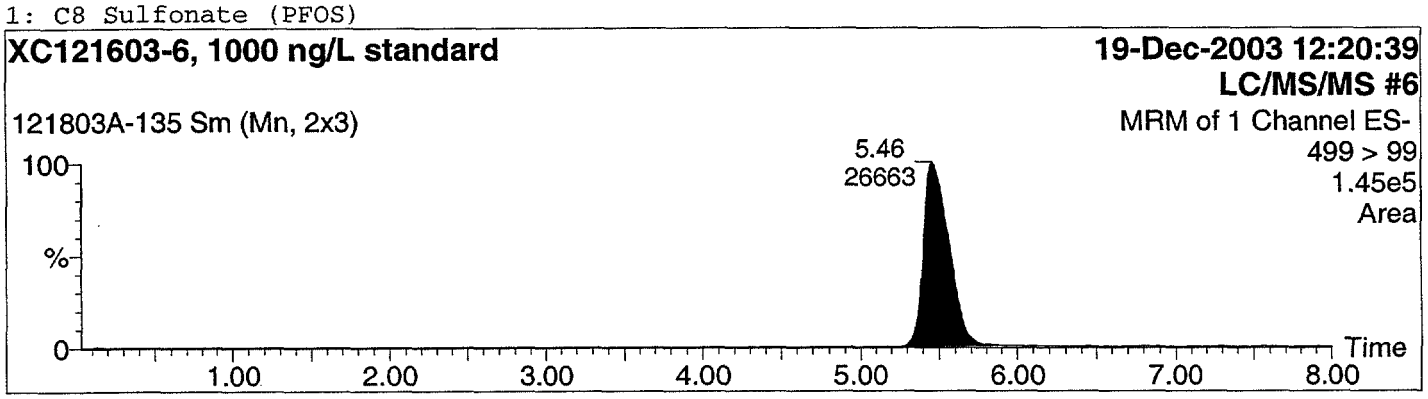
Study No.:L1278, Set No.:121803A, Ext.Date:12/18/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121803A Soil
Last modified: Mon Dec 22 07:45:59 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 07:54:17 2003

Name: 121803A-135
Text:

1: C8 Sulfonate (PFOS)



RAW DATA REPORT

Sponsor Study No:	NA	Limit of Quantitation:	50 ppt	Set No:	121903A
Exygen Study No:	L1278	Injection Volume:	15 µL	Analyst:	Karen Risha
Analyte:	**PFOS**	Matrix:	Soil	Instrument Type:	LC/MS/MS Unit #6
Ions Monitored:	499 -> 99	Sample Weight:	5.0 g	Extraction Date:	12/19/03
Site:	NA	Final Volume:	5.0 mL	Analyzed on:	12/19-20/03

Exygen ID	Sponsor ID	Sample Code	Run No.	Std. Conc. (ppt)	Dilution Factor	Peak Area	Analyte Found (ppt)	Amount Added (ppt)	Recovery (%)	Analyte Found (ppb)	Total Solids (%)	Analyte Found (ppb) Dry Weight
XC121603-0	-	C	121903A-201	0	-	0	-	-	-	-	-	-
XC121603-1	-	CS	121903A-202	25	-	629	-	-	-	-	-	-
XC121603-2	-	CS	121903A-203	50	-	1247	-	-	-	-	-	-
XC121603-3	-	CS	121903A-204	100	-	2383	-	-	-	-	-	-
XC121603-4	-	CS	121903A-205	250	-	7139	-	-	-	-	-	-
XC121603-5	-	CS	121903A-206	500	-	14059	-	-	-	-	-	-
XC121603-6	-	CS	121903A-207	1000	-	25223	-	-	-	-	-	-
Methanol Wash	-	C	121903A-208	-	-	0	-	-	-	-	-	-
Reagent Blank	NA	C	121903A-209	-	1	0	ND	-	-	-	-	-
Reagent Spk A	NA	LCS	121903A-210	-	1	1429	51.2	50	102	-	-	-
Reagent Spk B	NA	LCS	121903A-211	-	1	14623	558	500	112	-	-	-
L1278-18 Spk C	MW-4 (13-15)	LF	121903A-212	-	1	290097	^	500	-	-	-	-
L1278-29 Spk D	MW-6 (9-11)	LF	121903A-213	-	1	2987439	^	500	-	-	-	-
XC121603-1	-	CS	121903A-214	25	-	1006	-	-	-	-	-	-
L1278-15	MW-4 (0-2)	S	121903A-215	-	1	707243	*	-	-	-	88.07	-
L1278-16	MW-4 (3-5)	S	121903A-216	-	1	5722416	*	-	-	-	83.17	-
L1278-17	MW-4 (8-10)	S	121903A-217	-	1	658171	*	-	-	-	80.21	-
L1278-18	MW-4 (13-15)	S	121903A-218	-	1	279838	*	-	-	-	80.32	-
L1278-18 Rep	MW-4 (13-15)	S	121903A-219	-	1	409937	*	-	-	-	80.32	-
XC121603-2	-	CS	121903A-220	50	-	221760	-	-	-	-	-	-
L1278-19	MW-4 (18-20)	S	121903A-221	-	1	1249	*	-	-	-	77.80	-
L1278-20	MW-4 (28-30)	S	121903A-222	-	1	120111	*	-	-	-	68.10	-
L1278-21	MW-3 (4-6)	S	121903A-223	-	1	3175225	*	-	-	-	83.49	-
L1278-22	MW-3 (9-11)	S	121903A-224	-	1	341491	*	-	-	-	84.75	-
L1278-23	MW-3 (14-16)	S	121903A-225	-	1	115544	*	-	-	-	74.92	-
XC121603-3	-	CS	121903A-226	100	-	41509	-	-	-	-	-	-
L1278-24	MW-3 (19-21)	S	121903A-227	-	1	2423	*	-	-	-	81.95	-
L1278-25	MW-1 (0-2)	S	121903A-228	-	1	2551765	*	-	-	-	85.85	-
L1278-26	MW-1 (8-10)	S	121903A-229	-	1	756989	*	-	-	-	80.12	-
L1278-27	MW-6 (0-2)	S	121903A-230	-	1	3208199	*	-	-	-	94.85	-
L1278-28	MW-6 (4-6)	S	121903A-231	-	1	5338240	*	-	-	-	82.13	-
XC121603-4	-	CS	121903A-232	250	-	7366	-	-	-	-	-	-
L1278-29	MW-6 (9-11)	S	121903A-233	-	1	2787671	*	-	-	-	84.66	-
L1278-29 Rep	MW-6 (9-11)	S	121903A-234	-	1	2732608	*	-	-	-	84.66	-
L1278-30	MW-6 (14-16)	S	121903A-235	-	1	4574666	*	-	-	-	84.86	-
L1278-31	MW-6 (19-21)	S	121903A-236	-	1	2250395	*	-	-	-	80.88	-
L1278-32	MW-6 (24-26)	S	121903A-237	-	1	697285	*	-	-	-	78.28	-
XC121603-5	-	CS	121903A-238	500	-	13797	-	-	-	-	-	-
XC121603-6	-	CS	121903A-239	1000	-	24862	-	-	-	-	-	-

Analyte Found (ppt) = (peak area - intercept) / slope x DF

Recovery (%) = $\frac{\text{[analyte found (ppt)-analyte found in control (ppt)] x 100}}{\text{amount added (ppt)}}$

Standard Curve : Linear (1/x weighted)
Intercept = 96.2077
Slope = 26.0335
Coef. Of Det. = 0.994530

Analyte Found (ppb) = [analyte found (ppt) x volume extracted (0.04 L)] / sample weight (5 g)
Analyte Found (ppb) dry weight = analyte found (ppb) x (100% / total solids (%))

CS = Calibration standard
C = Control sample
S = Sample

LF = Lab fortified sample
FF = Field fortified sample
LCS = Laboratory Control Spike

CK = Check Standard
ND = Not detected = Response between 0 and 25 ppt
NQ = Not quantifiable = Response between 25 ppt and LOQ (50 ppt)

^Sample requires higher spiking level. See data set 122203A.
*Sample requires dilution. See data set 121903AR.

Spreadsheet prepared by: KR / 12/22/03

Exygen RESEARCH
3058 Research Drive
State College, PA 16801
Phone: 814-272-1039
Fax: 814-231-1580

Internal Chain of Custody/Fortification Sheet

Exygen Study Number: L1278 Matrix: Soil
Sponsor Study/Protocol No: NA
The samples listed below were removed from refrigerator No. 32
Time 0830 Date 12/18/03 Initials CEE

CLIENT SAMPLE ID	EXYGEN ID NUMBER	WEIGHT (g)	FORTIFICATION (ng)
na	Reagent Blank	-	-
na	Reagent Spk A	-	2.0
na	Reagent Spk B	-	20.0
MW-2 (0-2)	L1278-1 Spk C	5.0	20.0
MW-5 (23-25)	L1278-14 Spk D	5.0	20.0
MW-2 (0-2)	L1278-1	5.0	-
MW-2 (0-2)	L1278-1 Rep	5.0	-
MW-2 (3-5)	L1278-2	5.0	-
MW-2 (8-10)	L1278-3	5.0	-
MW-2 (13-15)	L1278-4	5.0	-
MW-2 (18-20)	L1278-5	5.0	-
MW-2 (23-25)	L1278-6	5.0	-
MW-2 (28-30)	L1278-7	5.0	-
MW-2 (33-35)	L1278-8	5.0	-
MW-5 (0-2)	L1278-9	5.0	-
MW-5 (3-5)	L1278-10	5.0	-
MW-5 (8-10)	L1278-11	5.0	-
MW-5 (13-15)	L1278-12	5.0	-
MW-5 (18-20)	L1278-13	5.0	-
MW-5 (23-25)	L1278-14	5.0	-
MW-5 (23-25)	L1278-14 Rep	5.0	-

	Spiking Solution Used	Volume Used for Spiking	Initial/Date
Reagent Spk A	F061703-10 (10 ng/mL)	200 µL (200 µL micropipet)	KL /12/18/03
Reagent Spk B	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KL /12/18/03
L1278-1 Spk C	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KL /12/18/03
L1278-14 Spk D	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KL /12/18/03
-	-	-	-

All samples were weighed on balance No. 20
Time 0950 Date 12/18/03 Initials CEE

After weighing samples were returned to refrigerator No. 32
Time 1200 Date 12/18/03 Initials CEE

Comments: 200 µL of 250 mg/mL sodium thiosulfate was added to all samples before spiking. Initials/Date: CEE 12/18/03

Analysis Summary:
Data Set: 121803A Initials/Date: KL / 12/18/03
Data Set: 121903AR Initials/Date: KL / 12/22/03
Data Set: — Initials/Date: — /

Set extraction/analysis data verified by: gmF Date: 12/30/03

Exygen RESEARCH
3058 Research Drive
State College, PA 16801
Phone: 814-272-1039
Fax: 814-231-1580

SAMPLE EXTRACTION AND ANALYSIS TRACKING SHEET

EXYGEN STUDY NUMBER: L1278
MATRIX: Soil
METHOD: 01M-008-046 Rev 1 (Modified)
ANALYTES: PFOS
PROTOCOL NUMBER: NA

Client ID	Exygen ID	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	Dilutions (mL/mL)	STEP 7	Dilutions (mL/mL)	STEP 8	Reagents/ Materials	Lot #
na	Reagent Blank							-		-	-	Methanol	43308345
na	Reagent Spk A							-		-	-	C18 SPE	W3223B3
na	Reagent Spk B							-		-	-	Type I Water	NA
MW-2 (0-2)	L1278-1 Spk C							-		-	-	-	-
MW-5 (23-25)	L1278-14 Spk D							-		-	-	-	-
MW-2 (0-2)	L1278-1							-		② 0.1/10, 0.1/1.0		-	-
MW-2 (0-2)	L1278-1 Rep							-		② 0.1/10, 0.1/1.0		-	-
MW-2 (3-5)	L1278-2							-		② 0.1/10, 0.1/1.0		-	-
MW-2 (8-10)	L1278-3							-		② 0.1/10, 0.1/1.0		-	-
MW-2 (13-15)	L1278-4							-		0.1/10		*Initials/Date*	CEE 12/18/03
MW-2 (18-20)	L1278-5							-		0.1/10		-	-
MW-2 (23-25)	L1278-6							-		0.1/10		-	-
MW-2 (28-30)	L1278-7							-		0.1/10		-	-
MW-2 (33-35)	L1278-8							-		0.1/10		-	-
MW-5 (0-2)	L1278-9							-		② 0.1/10, 0.1/1.0		-	-
MW-5 (3-5)	L1278-10							-		0.1/10		-	-
MW-5 (8-10)	L1278-11							-		② 0.1/10, 0.1/1.0		HPLC	
MW-5 (13-15)	L1278-12							-		0.1/10		Methanol	43308345
MW-5 (18-20)	L1278-13							-		0.1/10		Ammonium Acetate	V36159
MW-5 (23-25)	L1278-14							-		0.1/10		Type I water	NA
MW-5 (23-25)	L1278-14 Rep							-		0.1/10		-	-
*Initials/Date	-	CEE 12/18/03	CEE 12/18/03	CEE 12/18/03	CEE 12/18/03	CEE 12/18/03	CEE 12/18/03	-	KJ ① 12/18/03	KJ 12/22/03	KJ ③ 12/22/03	*Initials/Date*	KJ 12/18/03

STEP 1: Add 5mL of methanol and shake by hand for ~1 minute
STEP 2: Bring up to 40 mL with hypercarb filtered type I water
STEP 3: Centrifuge for 10 minutes at ~3000 rpm
STEP 4: Filter through glass acrodisc
STEP 5: SPE column clean up
STEP 6: Final volume to 5 mL collected in 15 mL polypropolene tubes
STEP 7: LC/MS/MS analysis
STEP 8: LC/MS/MS reanalysis.

*Initials and date under each step indicates the personnel that performed this step.
COMMENTS:

① SAMPLES WERE PLACED ON THE AUTOSAMPLER ON 12/18/03 BUT DID NOT INJECT UNTIL 12/19/03. KJ 12/22/03
② DF = 1000 KJ 12/22/03
③ SAMPLES WERE PLACED ON THE AUTOSAMPLER ON 12/22/03 BUT DID NOT INJECT UNTIL 12/23/03. KJ 12/24/03

Final extracts stored in refrigerator 32 Initials: CEE Date: 12/18/03

00035

Masslynx - Sample List

Exygen STUDY NO. L1278

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121903A Soil.SPL
Printed: Fri Dec 19 10:00:10 2003 KR 12/19/03

Page Position: (1, 1)

	Vial	File Name	LIMS ID	Client ID	Sample Description	Matrix	Sample Type	Conc (ng/L)	Conc B	Conc C	Test ID	DF	MS Method
1	1	121903A-201	---	---	XC121603-0, 0 ng/L standard	---	Blank	0	---	---	0	1	PFOS
2	2	121903A-202	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
3	3	121903A-203	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
4	4	121903A-204	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
5	5	121903A-205	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
6	6	121903A-206	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
7	7	121903A-207	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS
8	92	121903A-208	---	---	Methanol Wash	---	Blank	---	---	---	0	1	PFOS
9	72	121903A-209	---	---	Reagent Blank	---	Blank	---	---	---	0	1	PFOS
10	73	121903A-210	---	---	Reagent Spk A, 50 ng/L	---	QC	50	---	---	0	1	PFOS
11	74	121903A-211	---	---	Reagent Spk B, 500 ng/L	---	QC	500	---	---	0	1	PFOS
12	75	121903A-212	---	---	L1278-18 Spk C, 500 ng/L	---	QC	500	---	---	0	1	PFOS
13	76	121903A-213	---	---	L1278-29 Spk D, 500 ng/L	---	QC	500	---	---	0	1	PFOS
14	2	121903A-214	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
15	77	121903A-215	---	---	L1278-15	---	Analyte	---	---	---	0	1	PFOS
16	78	121903A-216	---	---	L1278-16	---	Analyte	---	---	---	0	1	PFOS
17	79	121903A-217	---	---	L1278-17	---	Analyte	---	---	---	0	1	PFOS
18	80	121903A-218	---	---	L1278-18	---	Analyte	---	---	---	0	1	PFOS
19	81	121903A-219	---	---	L1278-18 Rep	---	Analyte	---	---	---	0	1	PFOS
20	82	121903A-220	---	---	L1278-19	---	Analyte	---	---	---	0	1	PFOS
21	3	121903A-221	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
22	83	121903A-222	---	---	L1278-20	---	Analyte	---	---	---	0	1	PFOS
23	84	121903A-223	---	---	L1278-21	---	Analyte	---	---	---	0	1	PFOS
24	85	121903A-224	---	---	L1278-22	---	Analyte	---	---	---	0	1	PFOS
25	86	121903A-225	---	---	L1278-23	---	Analyte	---	---	---	0	1	PFOS
26	87	121903A-226	---	---	L1278-24	---	Analyte	---	---	---	0	1	PFOS
27	4	121903A-227	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
28	88	121903A-228	---	---	L1278-25	---	Analyte	---	---	---	0	1	PFOS
29	89	121903A-229	---	---	L1278-26	---	Analyte	---	---	---	0	1	PFOS
30	90	121903A-230	---	---	L1278-27	---	Analyte	---	---	---	0	1	PFOS
31	46	121903A-231	---	---	L1278-28	---	Analyte	---	---	---	0	1	PFOS
32	5	121903A-232	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
33	47	121903A-233	---	---	L1278-29	---	Analyte	---	---	---	0	1	PFOS
34	48	121903A-234	---	---	L1278-29 Rep	---	Analyte	---	---	---	0	1	PFOS
35	49	121903A-235	---	---	L1278-30	---	Analyte	---	---	---	0	1	PFOS
36	50	121903A-236	---	---	L1278-31	---	Analyte	---	---	---	0	1	PFOS
37	10	121903A-237	---	---	L1278-32	---	Analyte	---	---	---	0	1	PFOS
38	6	121903A-238	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
39	7	121903A-239	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121903A Soil.SPL
Printed: Fri Dec 19 10:00:10 2003 KR 12/19/03

Exygen STUDY NO. L1278

	HPLC Method	MS Tune File	Inj.Volume
1	PFOSand PFOA	Fluorochems	15
2	PFOSand PFOA	Fluorochems	15
3	PFOSand PFOA	Fluorochems	15
4	PFOSand PFOA	Fluorochems	15
5	PFOSand PFOA	Fluorochems	15
6	PFOSand PFOA	Fluorochems	15
7	PFOSand PFOA	Fluorochems	15
8	PFOSand PFOA	Fluorochems	15
9	PFOSand PFOA	Fluorochems	15
10	PFOSand PFOA	Fluorochems	15
11	PFOSand PFOA	Fluorochems	15
12	PFOSand PFOA	Fluorochems	15
13	PFOSand PFOA	Fluorochems	15
14	PFOSand PFOA	Fluorochems	15
15	PFOSand PFOA	Fluorochems	15
16	PFOSand PFOA	Fluorochems	15
17	PFOSand PFOA	Fluorochems	15
18	PFOSand PFOA	Fluorochems	15
19	PFOSand PFOA	Fluorochems	15
20	PFOSand PFOA	Fluorochems	15
21	PFOSand PFOA	Fluorochems	15
22	PFOSand PFOA	Fluorochems	15
23	PFOSand PFOA	Fluorochems	15
24	PFOSand PFOA	Fluorochems	15
25	PFOSand PFOA	Fluorochems	15
26	PFOSand PFOA	Fluorochems	15
27	PFOSand PFOA	Fluorochems	15
28	PFOSand PFOA	Fluorochems	15
29	PFOSand PFOA	Fluorochems	15
30	PFOSand PFOA	Fluorochems	15
31	PFOSand PFOA	Fluorochems	15
32	PFOSand PFOA	Fluorochems	15
33	PFOSand PFOA	Fluorochems	15
34	PFOSand PFOA	Fluorochems	15
35	PFOSand PFOA	Fluorochems	15
36	PFOSand PFOA	Fluorochems	15
37	PFOSand PFOA	Fluorochems	15
38	PFOSand PFOA	Fluorochems	15
39	PFOSand PFOA	Fluorochems	15

LC/MS/MS SYSTEM AND OPERATING CONDITIONS

Sponsor Protocol No: NA | Exygen Study No: L1278

Instrument:	Micromass Quattro Ultima (LC/MS/MS Unit #6)
Computer:	COMPAQ Professional Workstation AP200
Software:	Microsoft Windows NT: Version 4 Build 1381: Service Pack 5 Micromass Limited: MassLynx 3.4 Build 004
HPLC Equipment:	Hewlett Packard (HP) Series 1100 HP Bin Pump — HP Vacuum Degasser HP Autosampler — HP Column Oven
HPLC Column:	Genesis C-8, 5 cm x 2.1 mm i.d. x 4 μ (Exygen ID: 74A) (JONESCHROMATOGRAPHY: Part No. FK5962E)
Mobile Phase (A) :	2 mM Ammonium Acetate in Type I Water
Mobile Phase (B) :	Methanol
Analyst:	Karen Risha Exygen Research 3058 Research Drive, State College, PA 16801 Phone: (814) 272-1039 FAX: (814) 231-1580

KR 12/19/03

NOTE: The next 3 pages are computer generated printouts from the masslynx software program. The pages contain the instrument settings used for the analysis of this data set.

All Handwritten Peak ID's by: KR 12/22/03

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\PFOS
Last Modified: Thu Dec 18 14:43:11 2003

Printed: Fri Dec 19 10:00:17 2003

12/19/03

Solvent Delay (mins) : 0.00

Analog Channel 4 : Unused
Function : 1 MRM of 1 Mass Pair (ESP-)

Inter Channel Delay (Secs) : 0.03
Span (Daltons) : 0.00
Start Time (Mins) : 0.00
End Time (Mins) : 8.00
Repeats : 1

Channel	Parent	Daughter	Dwell (Secs)	Coll Energy (eV)	Cone (V)
1	499.00	99.00	0.20	40	30

Method File: c:\masslynx\fluorochemicals.pro\acqudb\pfosand pfoa
Last Modified: Friday, December 19, 2003 09:49:13

Printed: Friday, December 19, 2003 10:00:24

KB 12/19/03

HP1100 LC Pump Initial Conditions

Solvents	
A%	60.0
B%	40.0
C%	0.0
D%	0.0
Flow (ml/min)	0.300
Stop Time (mins)	14.0
Min Pressure (bar)	0
Max Pressure (bar)	400
Oven Temperature Left(°C)	35.0
Oven Temperature Right(°C)	35.0

HP1100 LC Pump Gradient Timetable

The gradient Timetable contains 9 entries which are :

Time	A%	B%	C%	D%	Flow	Pressure
0.00	60.0	40.0	0.0	0.0	0.300	400
0.40	60.0	40.0	0.0	0.0	0.300	400
1.00	10.0	90.0	0.0	0.0	0.300	400
7.00	10.0	90.0	0.0	0.0	0.300	400
7.50	0.0	100.0	0.0	0.0	0.300	400
9.00	0.0	100.0	0.0	0.0	0.400	400
9.50	60.0	40.0	0.0	0.0	0.400	400
13.50	60.0	40.0	0.0	0.0	0.400	400
14.00	60.0	40.0	0.0	0.0	0.300	400

HP1100 LC Pump External Event Timetable

The Timetable contains 6 entries which are :

Time	Column Switch	Contact1	Contact2	Contact3	Contact4
Initial	Off	Off	Off	Off	Off
0.00	Off	On	Off	Off	Off
0.05	Off	Off	Off	Off	Off
0.10	Off	Off	On	Off	Off
7.95	Off	Off	Off	On	Off
8.00	Off	Off	Off	Off	Off

HP1100 Autosampler Initial Conditions

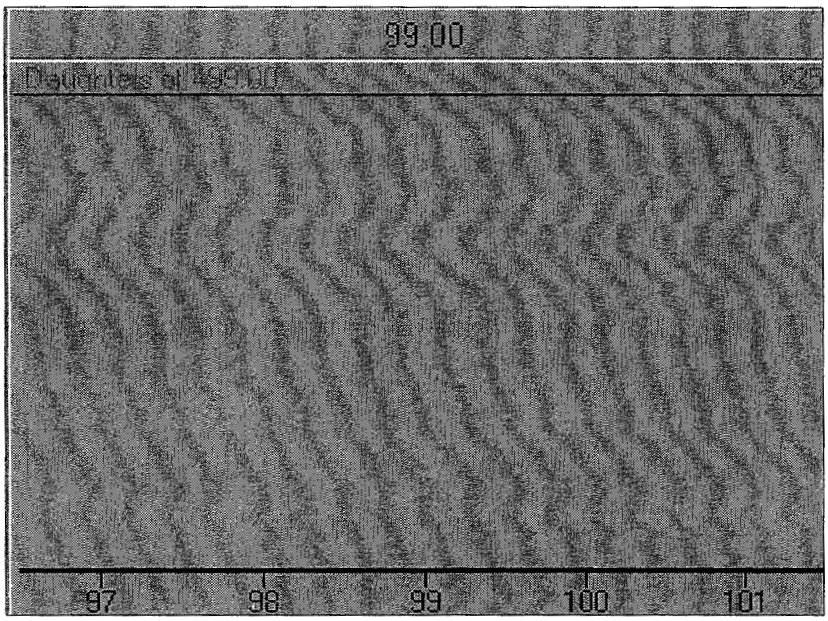
Draw Speed	200.0
Eject Speed (µl/min)	200
Draw Position (mm)	0.50
Stop Time (mins)	14.00
Injection Volume(µl)	15.0
Vial Number	64

Tuning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\FLUOROCHEMS

Printed: Fri Dec 19 10:00:44 2003

KJ 12/19/03



Dau 499.00

SOURCE (ESP-)	Set	Rdbk	Analyser	Set	Rdbk
Capillary	3.00	-2.93	LM Res 1	14.0	
Cone	20	-31	HM Res 1	14.0	
Hexapole 1	0.0		IEnergy 1	1.0	
Aperture 1	0.0		Entrance	-2	37
Hexapole 2	0.0		Collision	15	39
Source Block Temp.	100	100	Exit	2	41
Desolvation Temp.	300	299	LM Res 2	14.0	
			HM Res 2	14.0	
			IEnergy 2	2.0	
			Multiplier	650	-648

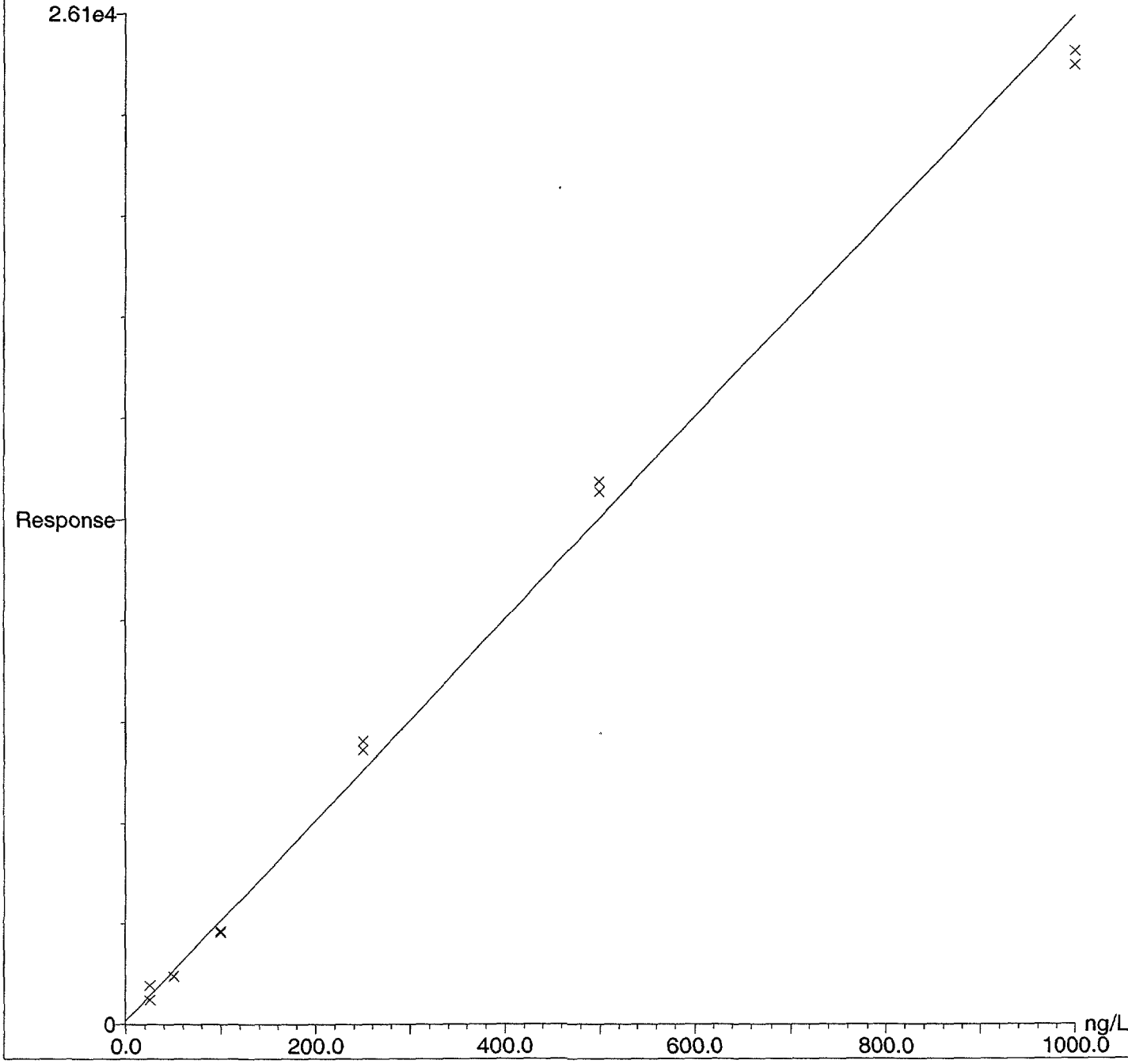
Pressures	Rdbk	Gas Flows	Rdbk
Analyser Vacuum	OFF	Cone Gas	130.3
Gas Cell	2.9e-3	Desolvation	752.7

Quantify Calibration Report
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Calibration: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\CurveDB\121903A Soil
Last modified: Mon Dec 22 08:12:36 2003
Printed: Mon Dec 22 08:13:21 2003

KR 12/22/03

Compound 1 name: C8 Sulfonate (PFOS)
Coefficient of Determination: 0.994530
Calibration curve: 26.0335 * x + 96.2077
Response type: External Std, Area
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

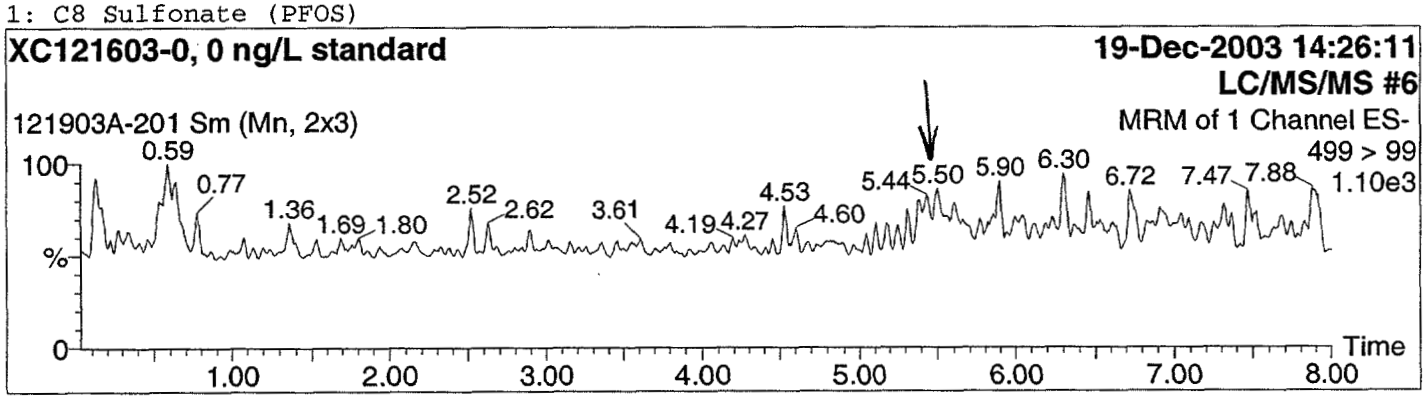
Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Initials KB
Date 12/22/03
Run# 121963A-201 To 121903A-239

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-201
Text:

1: C8 Sulfonate (PFOS)



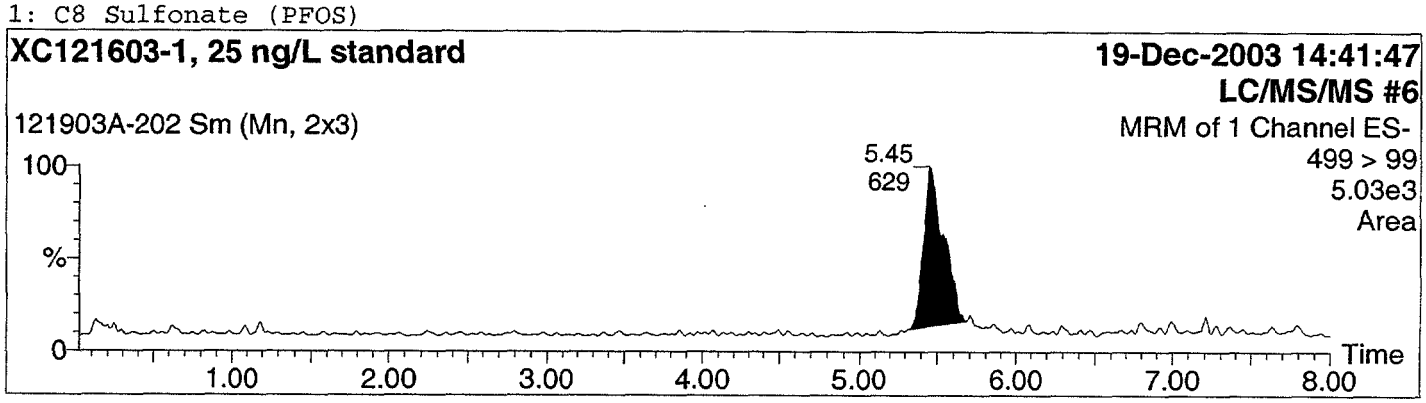
Quantify Sample Report
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-202
Text:

1: C8 Sulfonate (PFOS)



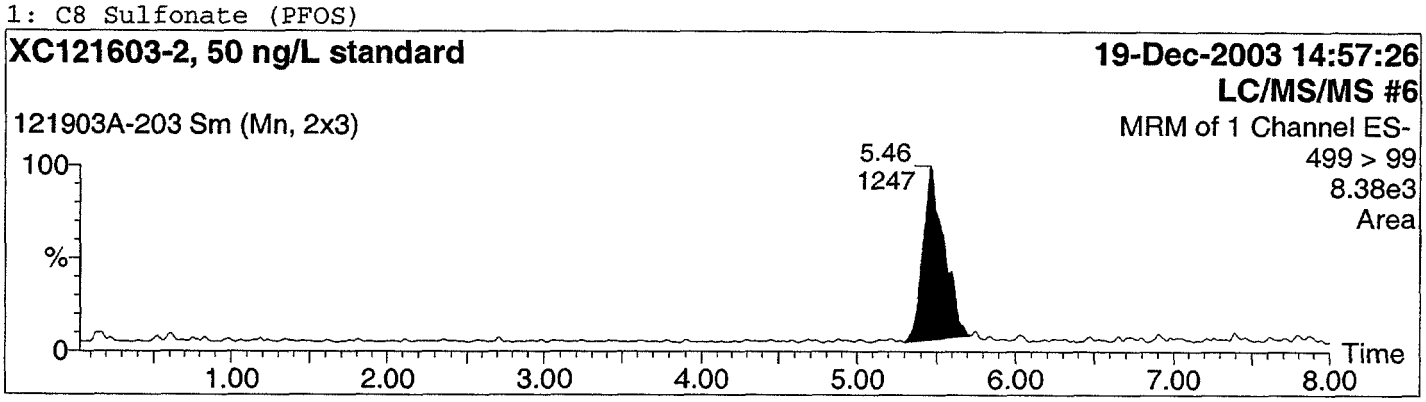
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-203
Text:

1: C8 Sulfonate (PFOS)



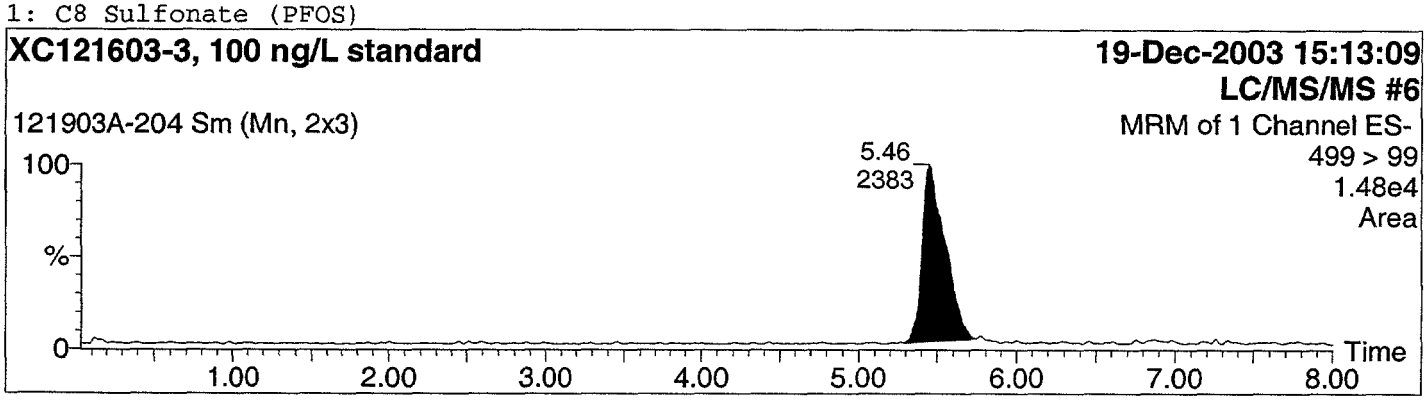
Quantify Sample Report
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-204
Text:

1: C8 Sulfonate (PFOS)



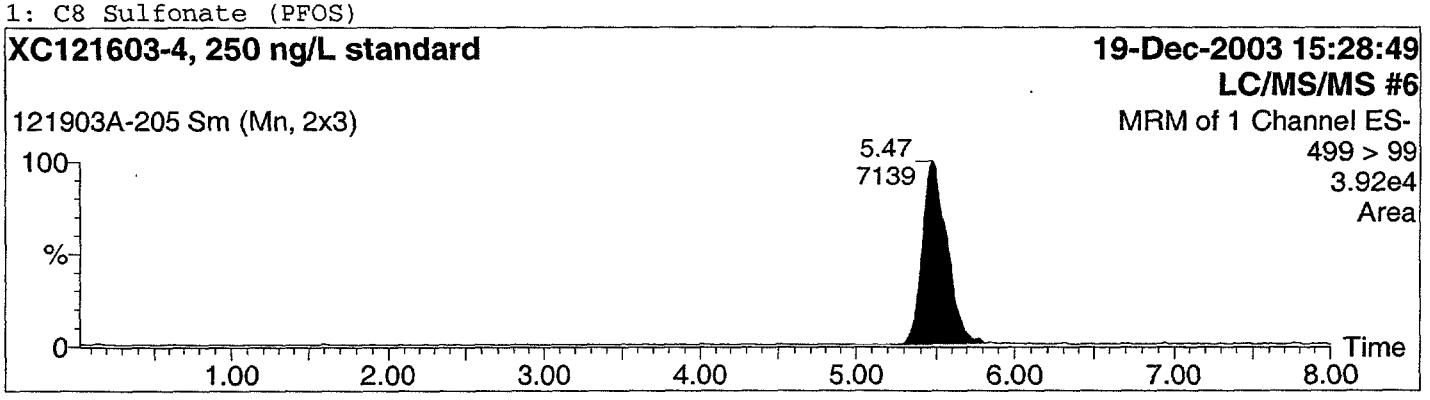
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-205
Text:

1: C8 Sulfonate (PFOS)



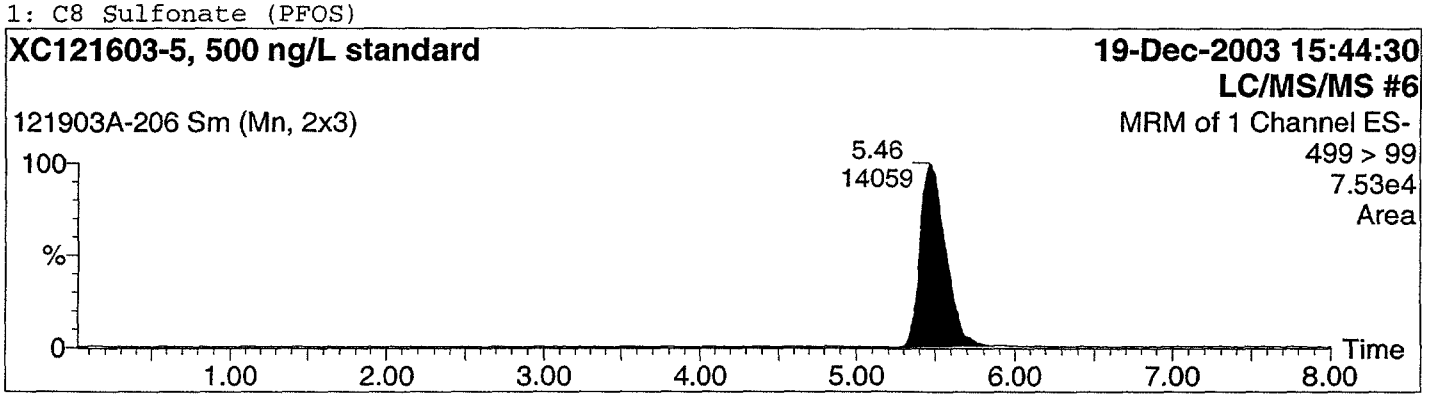
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-206
Text:

1: C8 Sulfonate (PFOS)



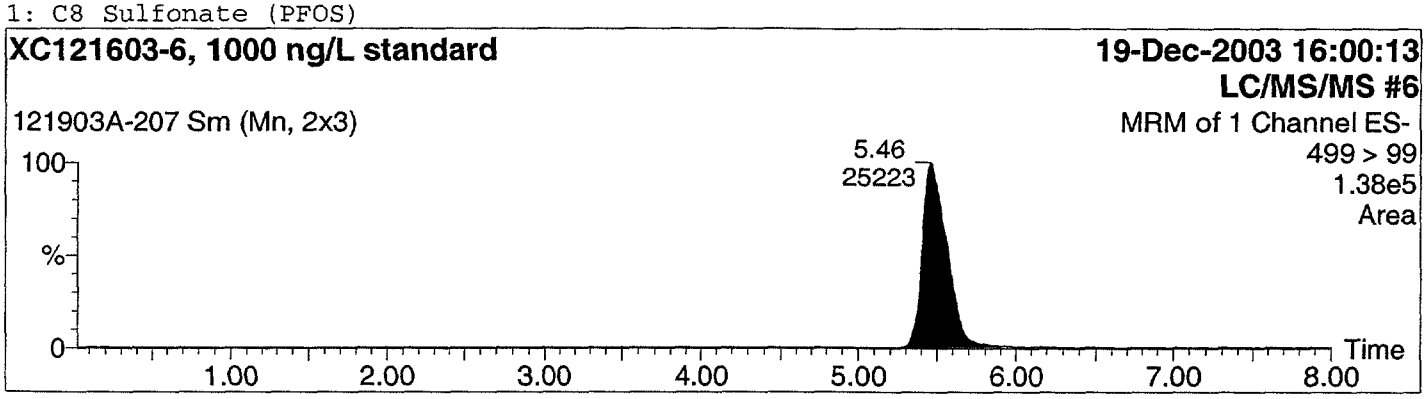
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-207
Text:

1: C8 Sulfonate (PFOS)

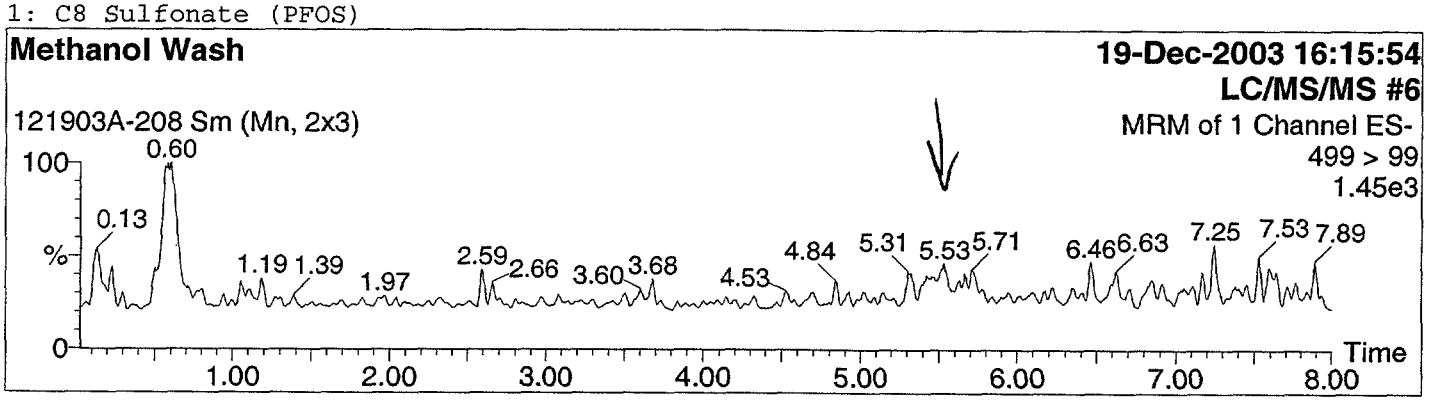


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-208
Text:

1: C8 Sulfonate (PFOS)



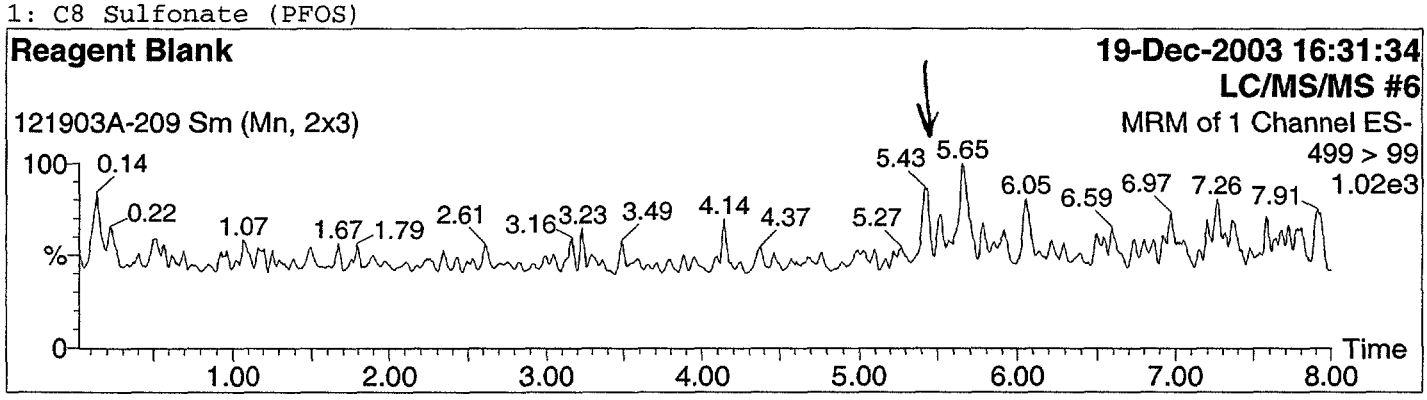
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-209
Text:

1: C8 Sulfonate (PFOS)

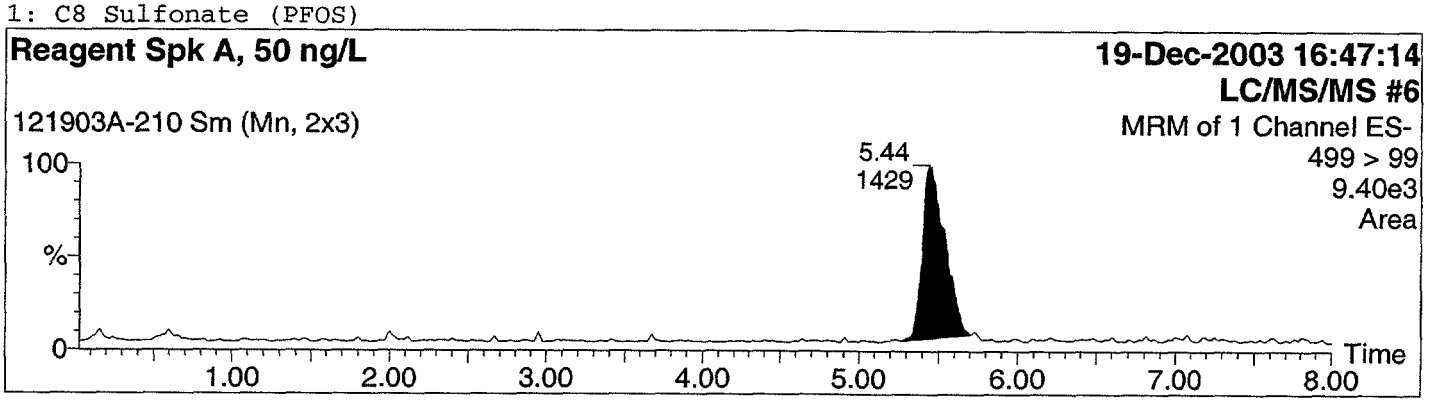


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-210
Text:

1: C8 Sulfonate (PFOS)

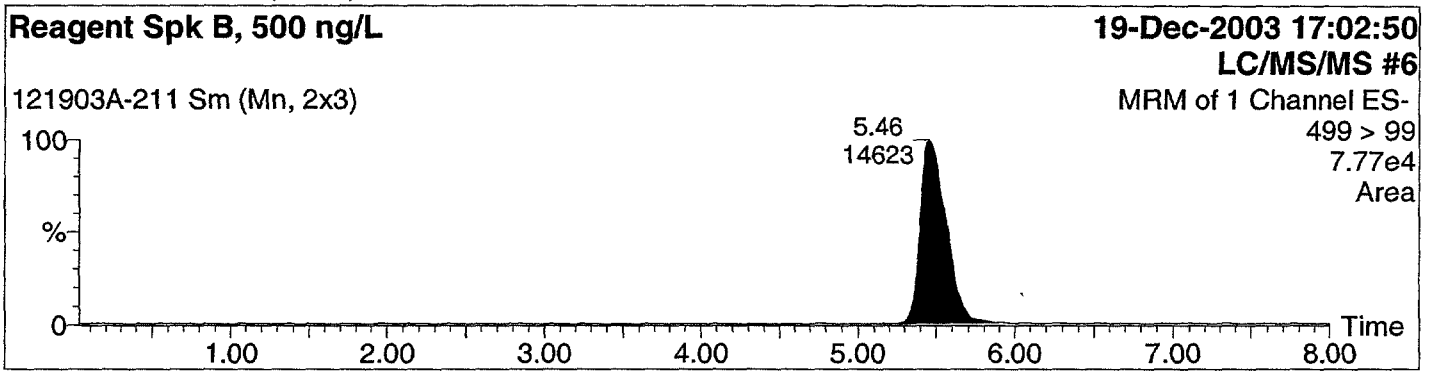


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-211
Text:

1: C8 Sulfonate (PFOS)



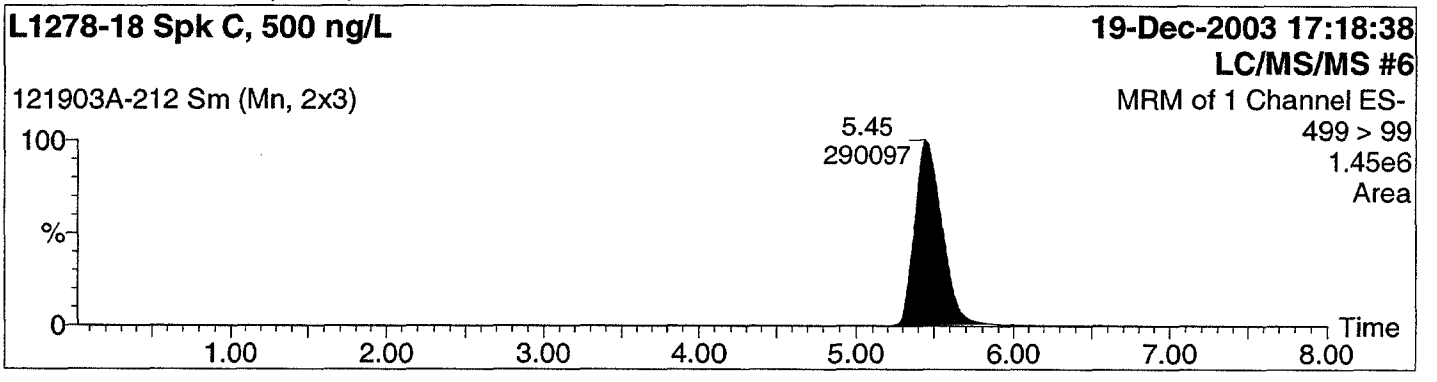
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-212
Text:

1: C8 Sulfonate (PFOS)

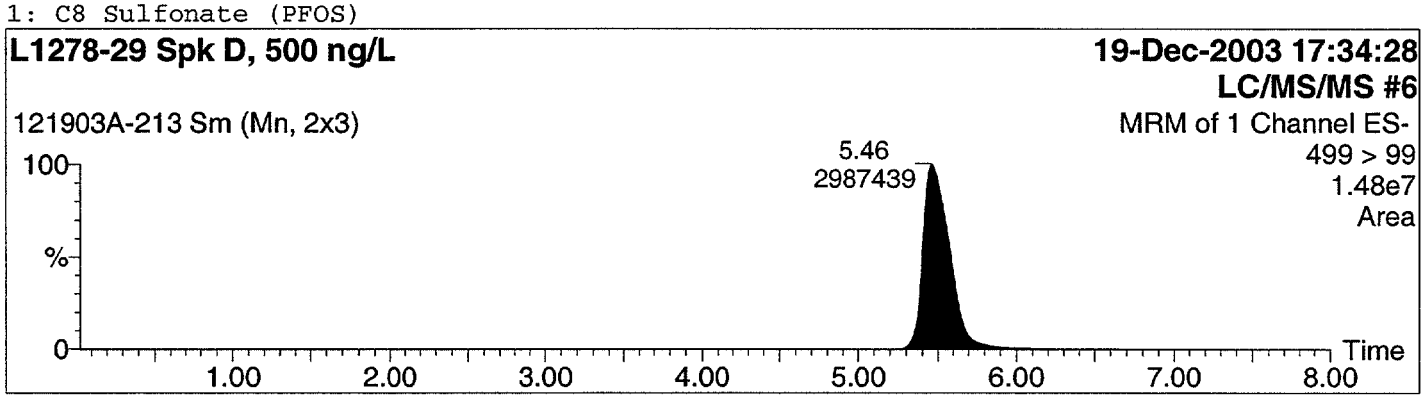


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-213
Text:

1: C8 Sulfonate (PFOS)



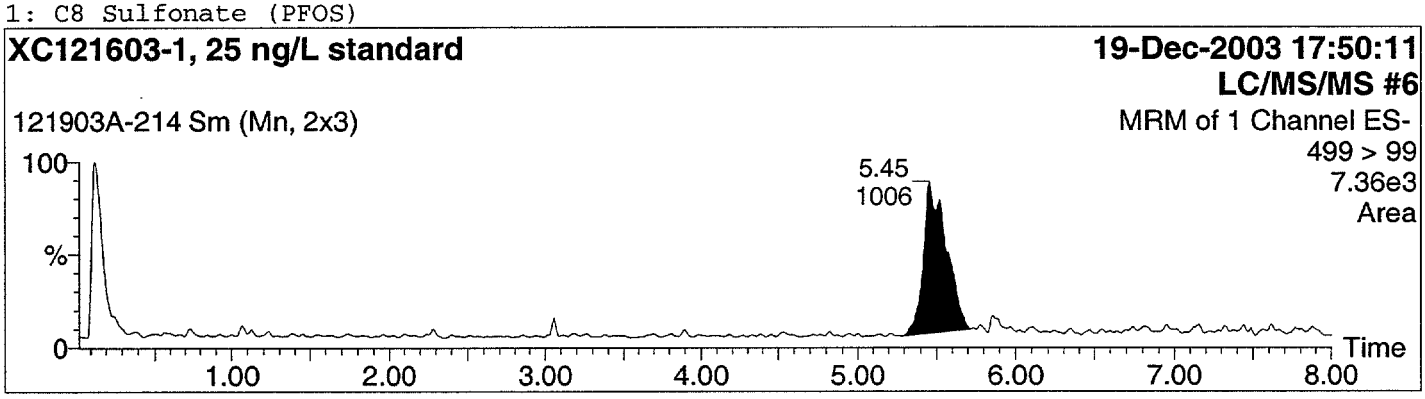
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-214
Text:

1: C8 Sulfonate (PFOS)



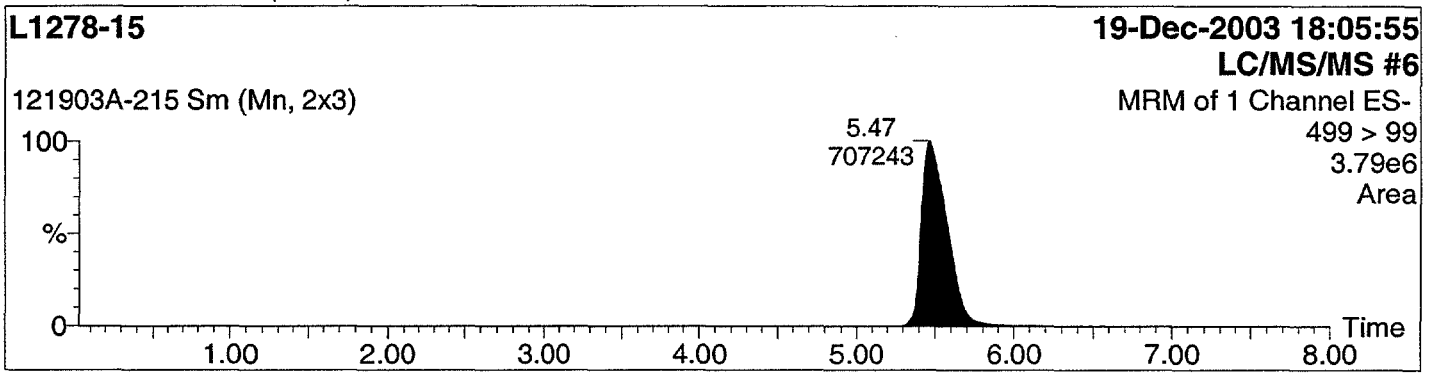
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-215
Text:

1: C8 Sulfonate (PFOS)



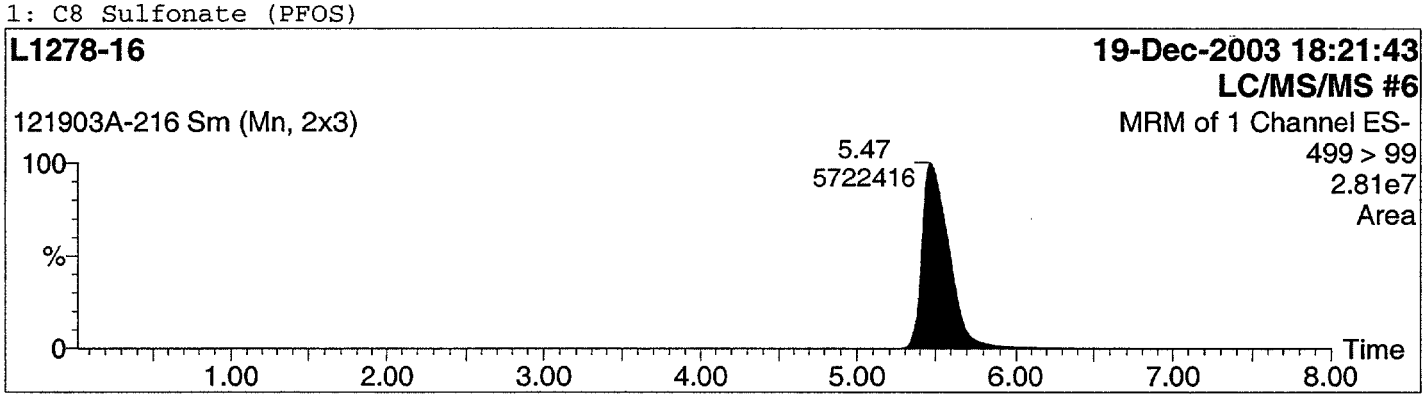
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-216
Text:

1: C8 Sulfonate (PFOS)



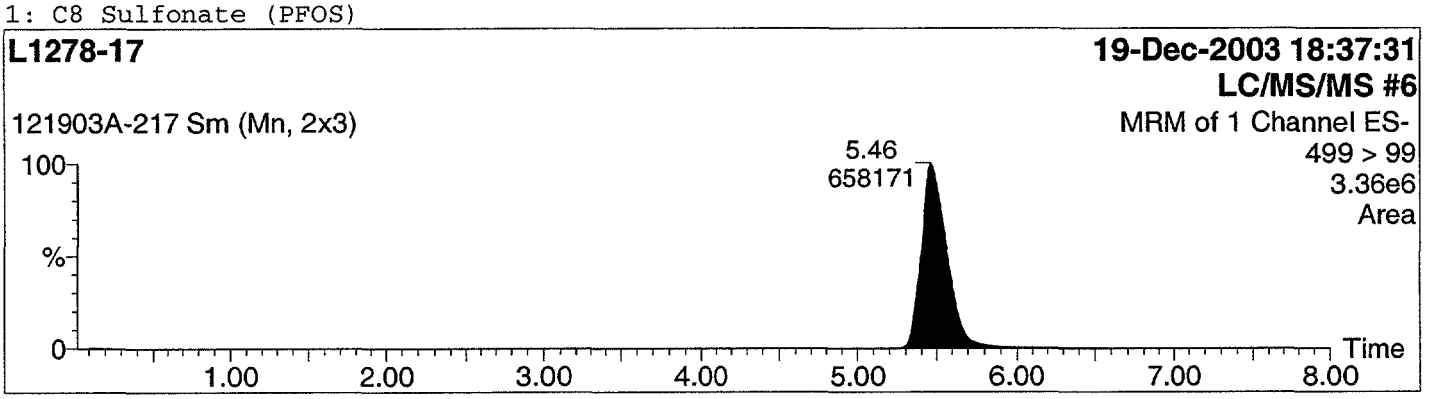
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-217
Text:

1: C8 Sulfonate (PFOS)



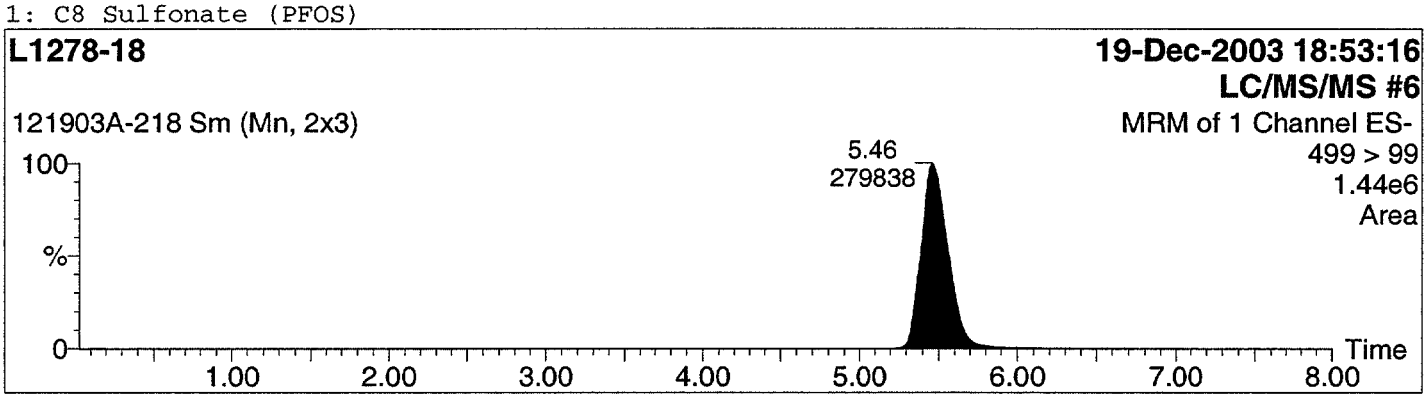
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-218
Text:

1: C8 Sulfonate (PFOS)



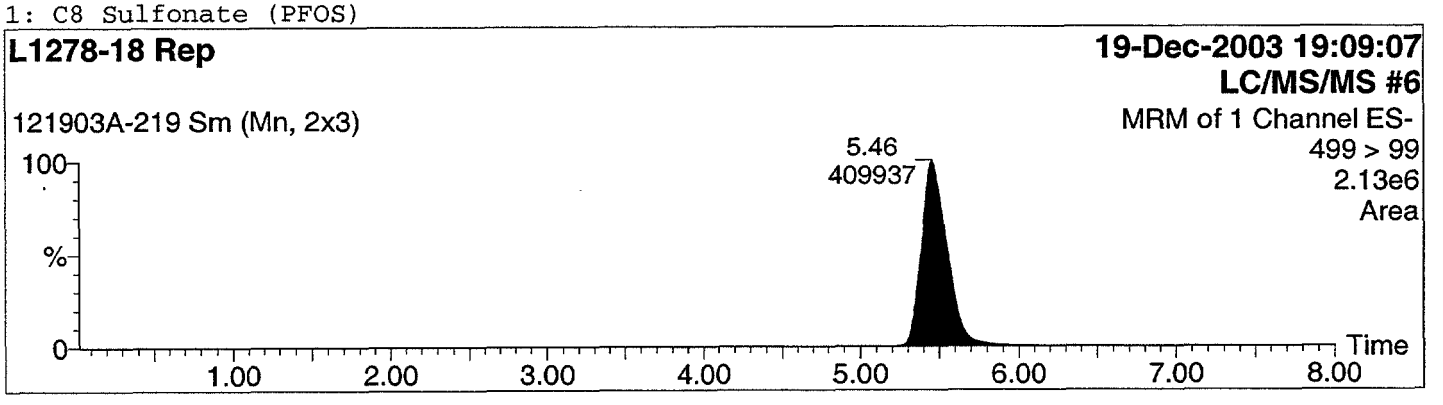
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-219
Text:

1: C8 Sulfonate (PFOS)



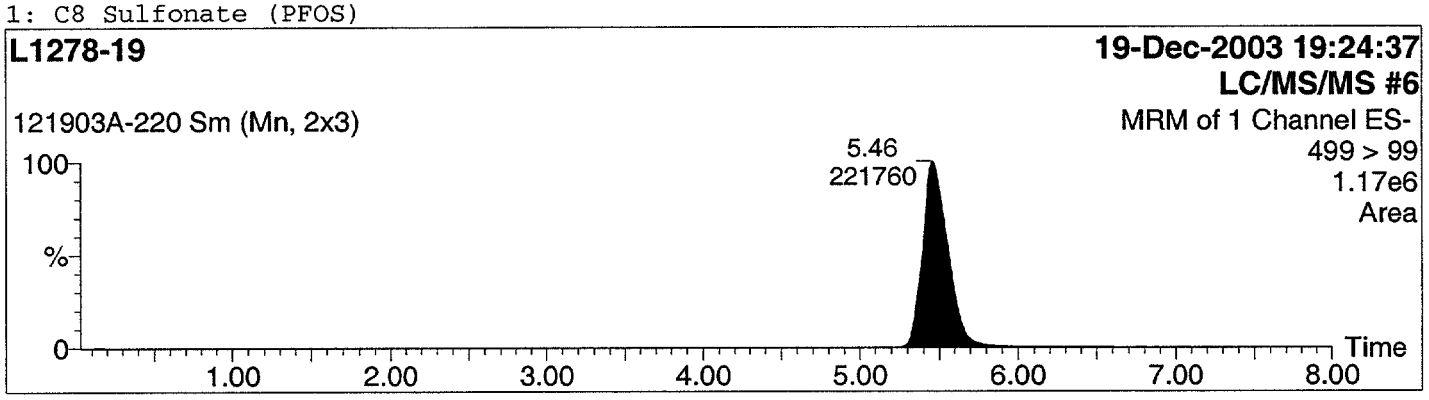
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-220
Text:

1: C8 Sulfonate (PFOS)

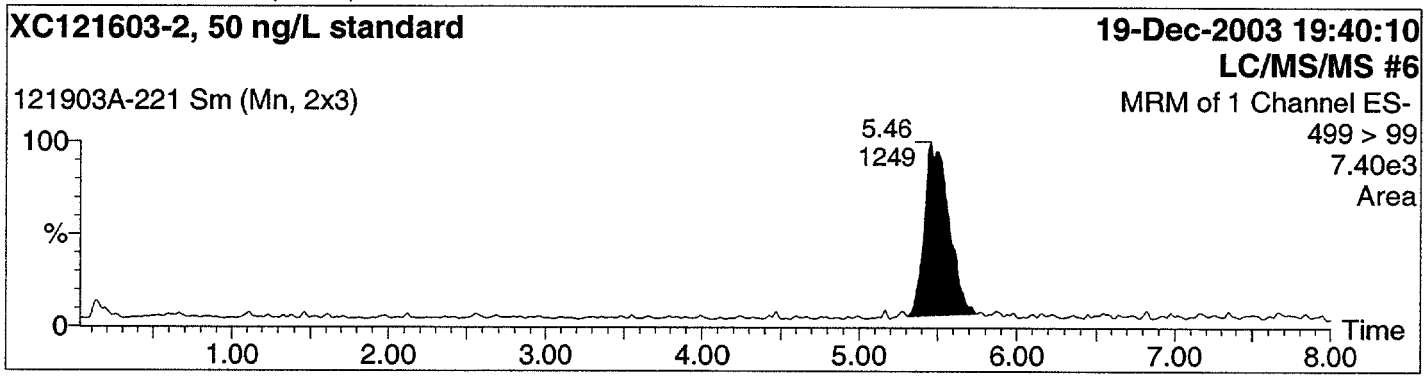


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-221
Text:

1: C8 Sulfonate (PFOS)



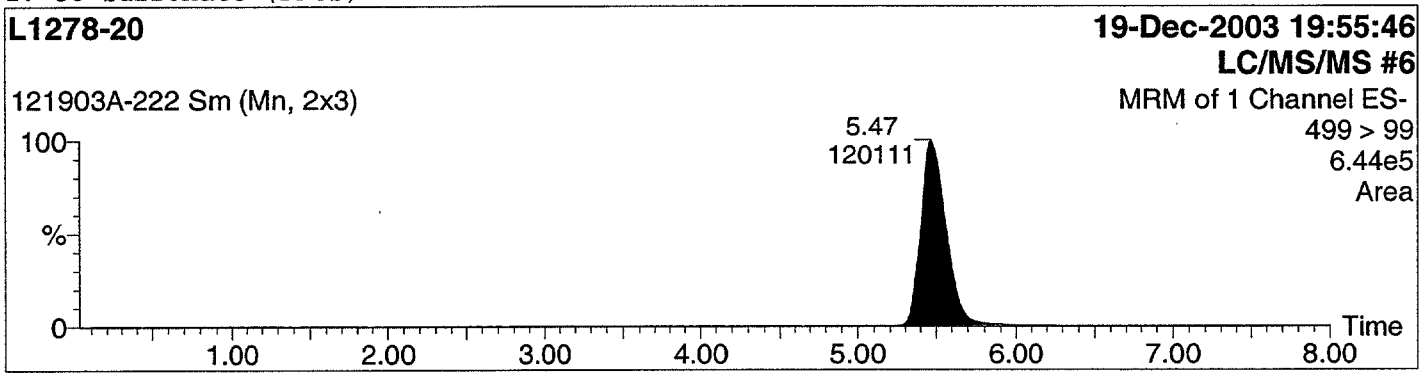
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-222
Text:

1: C8 Sulfonate (PFOS)



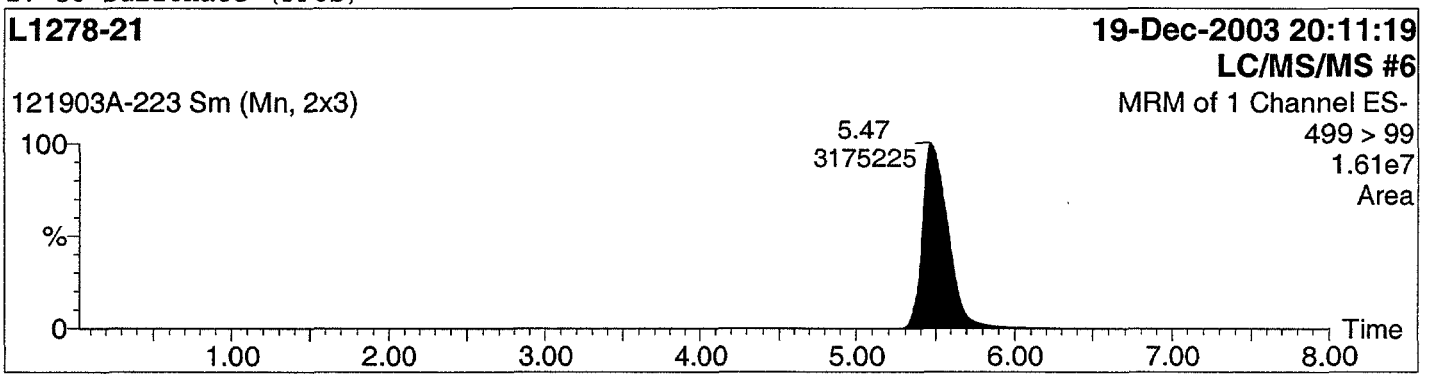
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-223
Text:

1: C8 Sulfonate (PFOS)



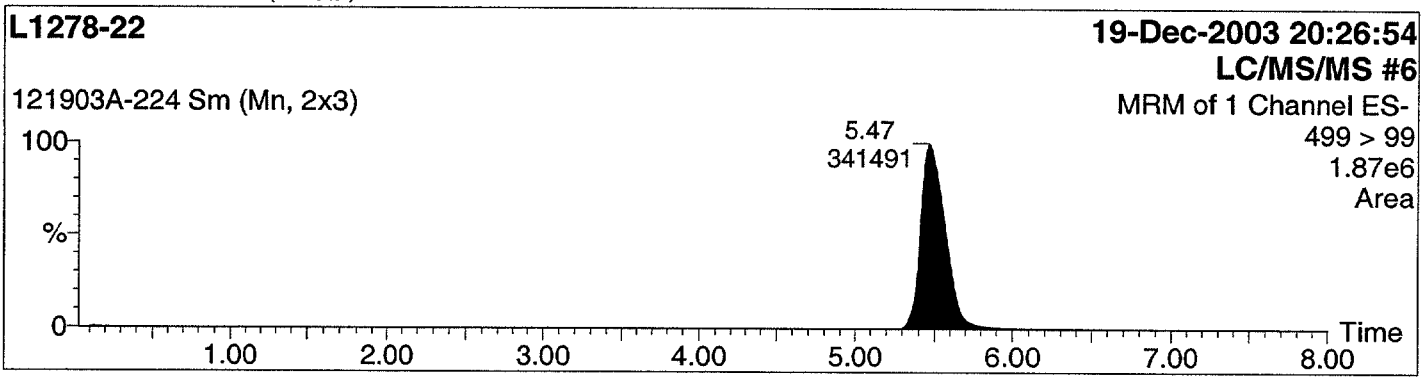
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-224
Text:

1: C8 Sulfonate (PFOS)



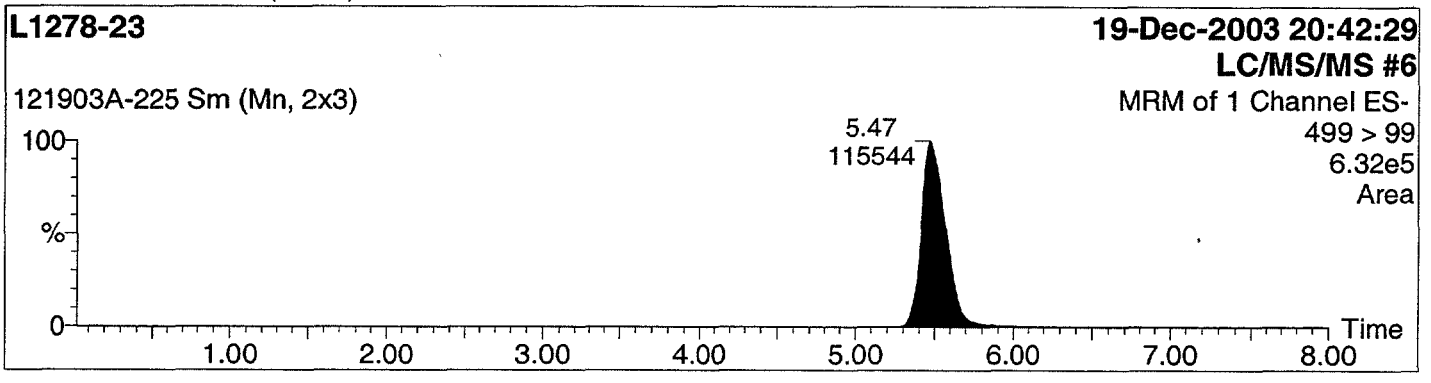
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-225
Text:

1: C8 Sulfonate (PFOS)



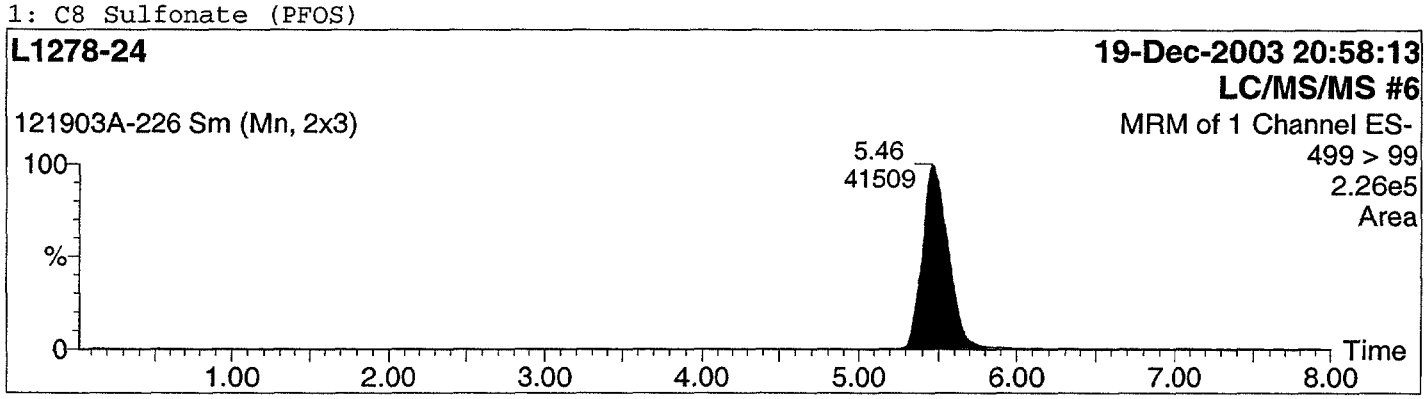
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-226
Text:

1: C8 Sulfonate (PFOS)



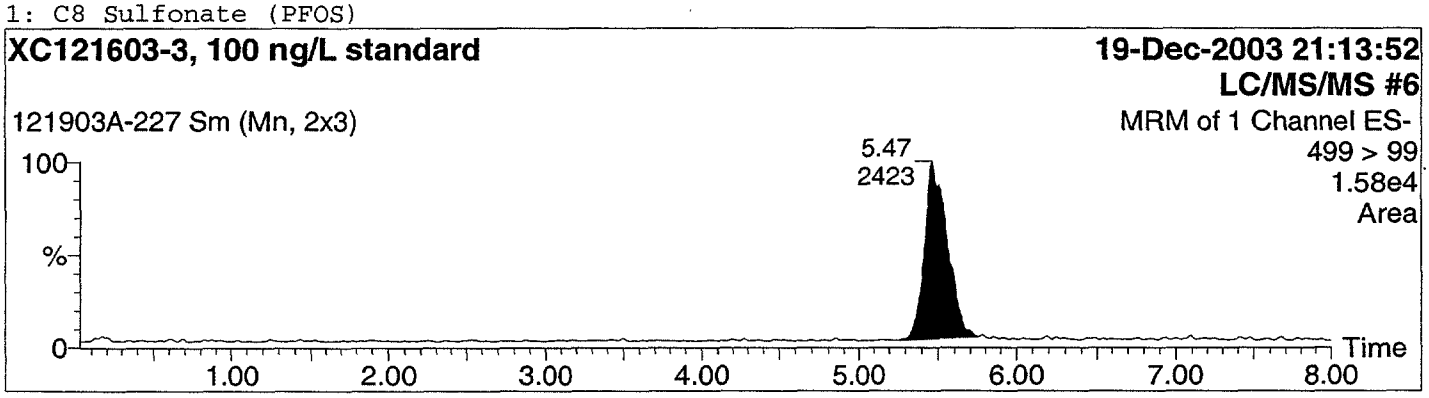
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-227
Text:

1: C8 Sulfonate (PFOS)



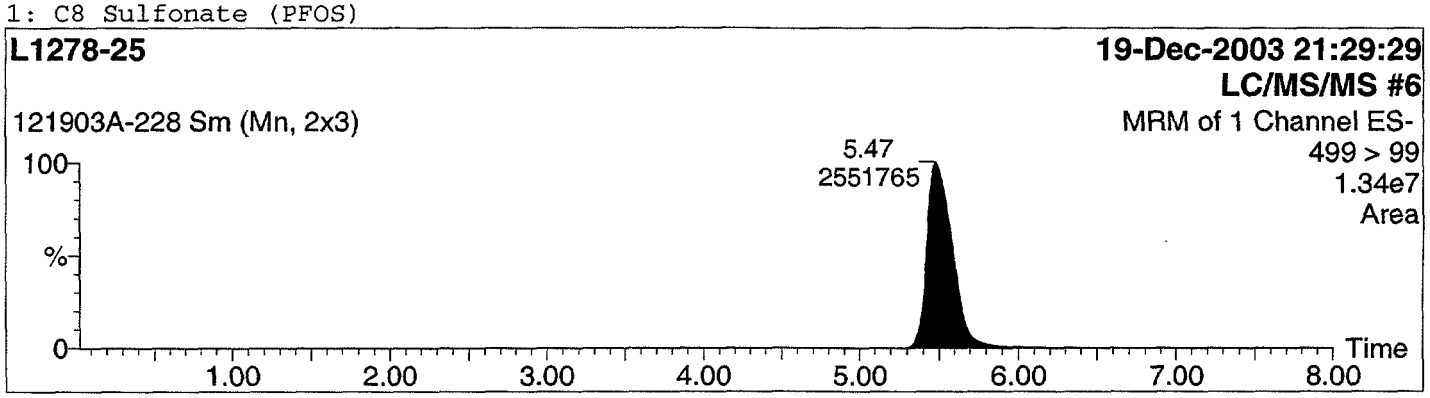
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-228
Text:

1: C8 Sulfonate (PFOS)



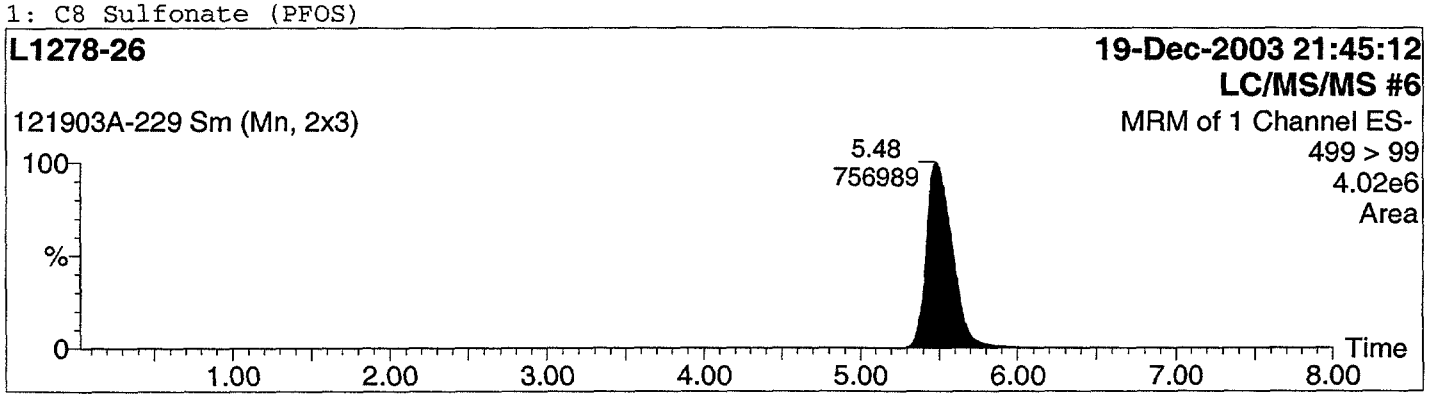
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-229
Text:

1: C8 Sulfonate (PFOS)



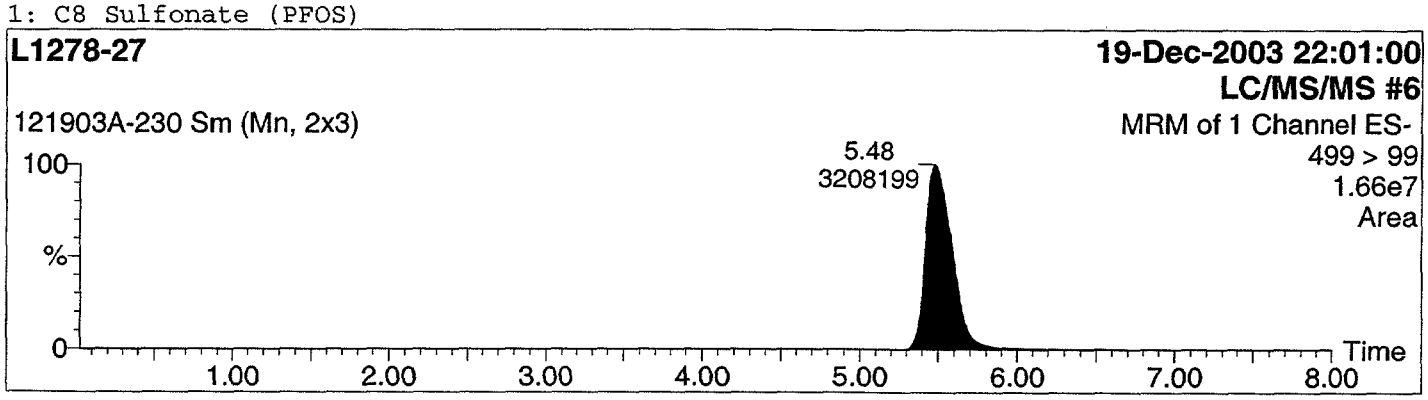
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-230
Text:

1: C8 Sulfonate (PFOS)



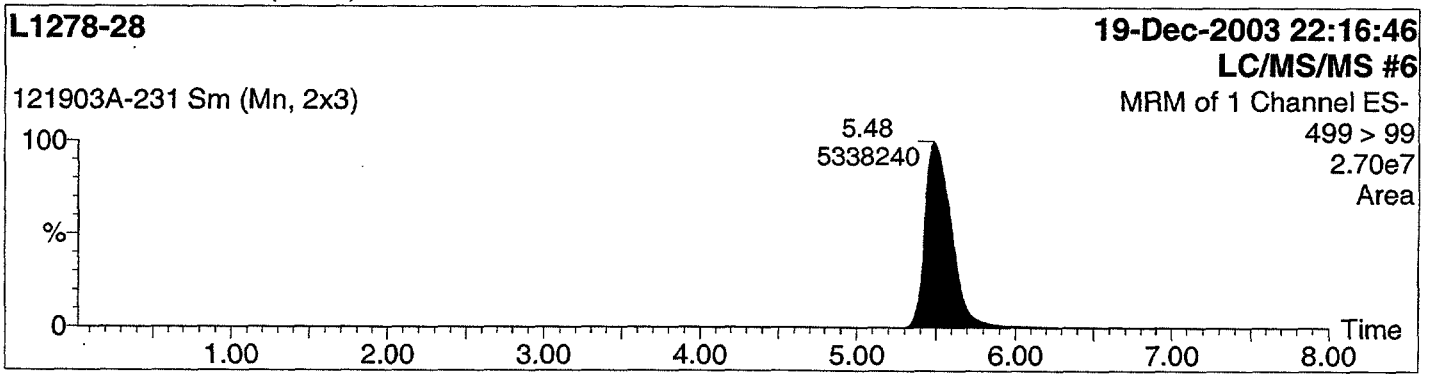
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-231
Text:

1: C8 Sulfonate (PFOS)

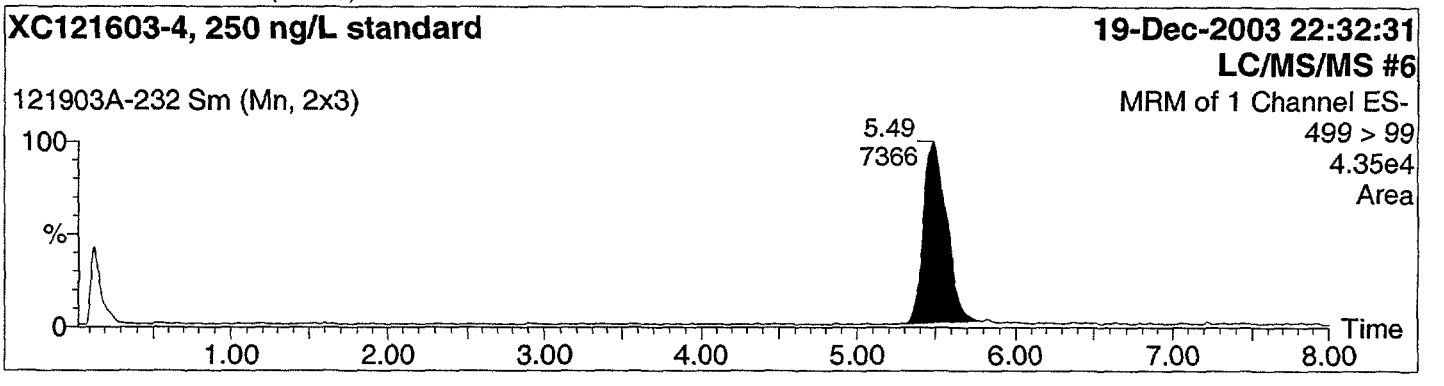


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-232
Text:

1: C8 Sulfonate (PFOS)



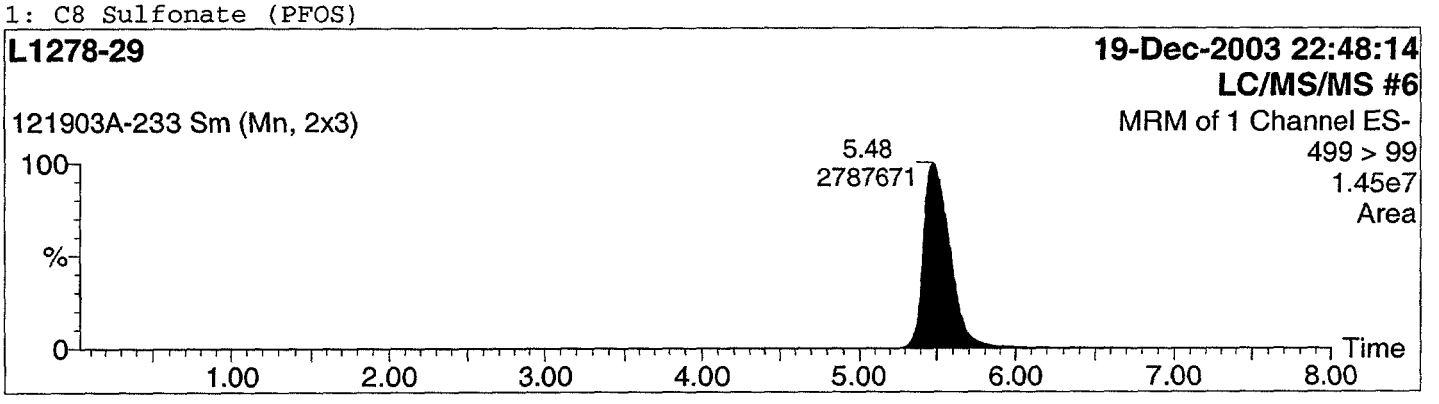
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-233
Text:

1: C8 Sulfonate (PFOS)

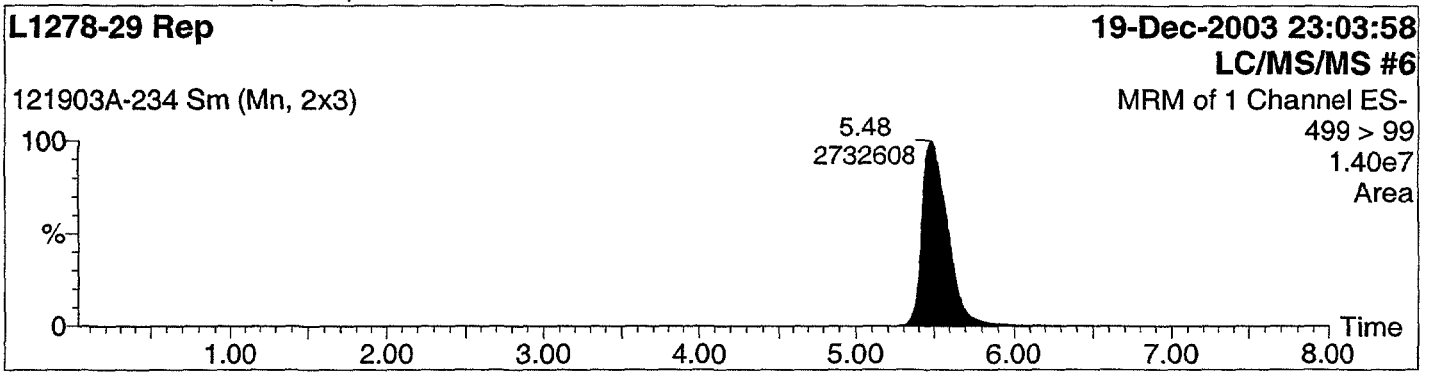


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-234
Text:

1: C8 Sulfonate (PFOS)

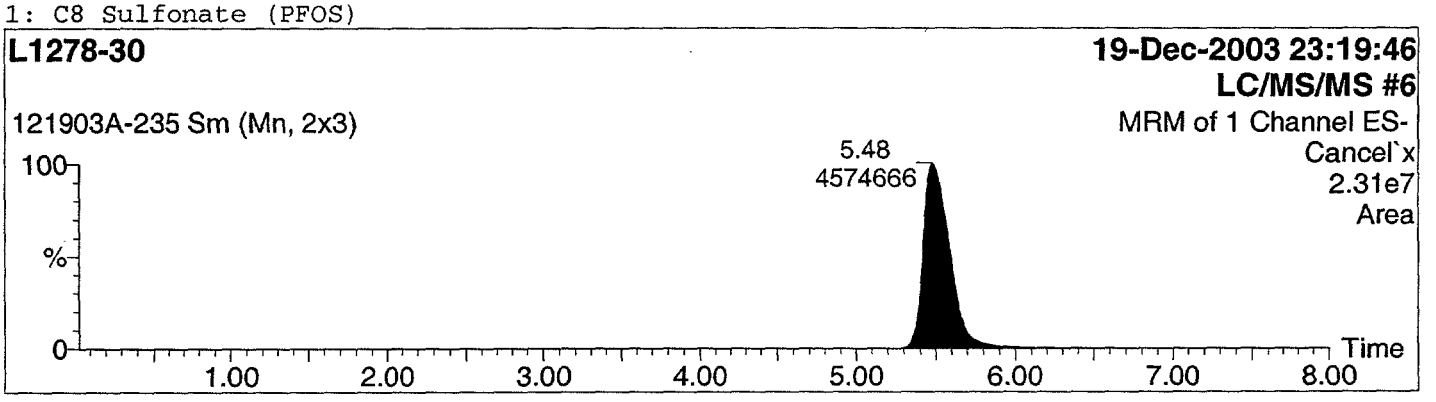


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-235
Text:

1: C8 Sulfonate (PFOS)



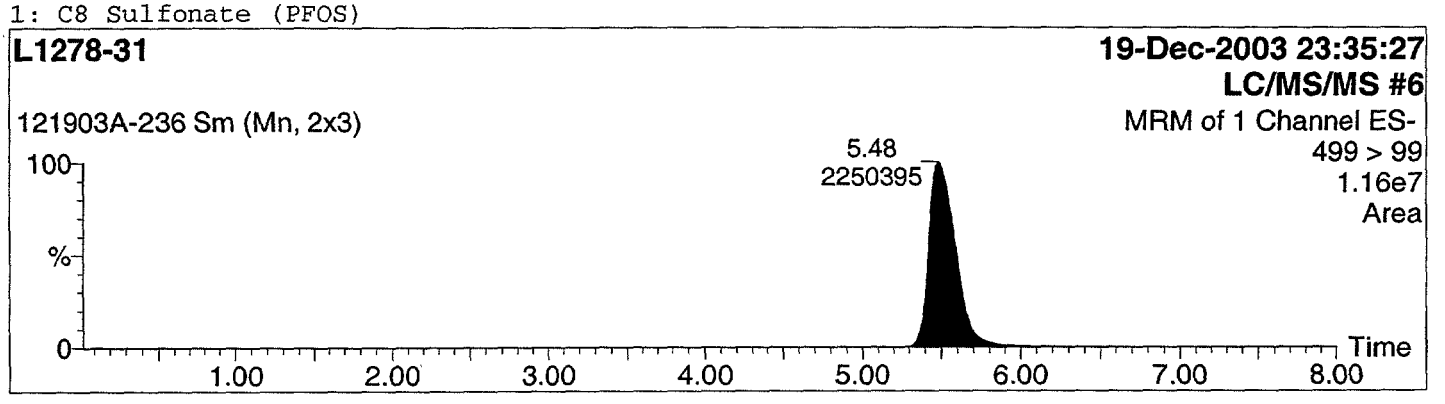
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-236
Text:

1: C8 Sulfonate (PFOS)

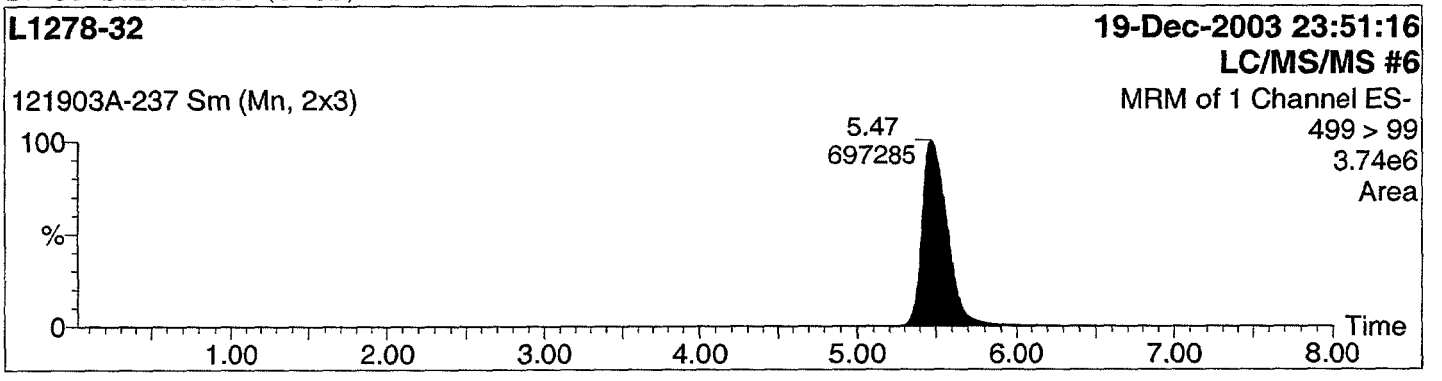


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-237
Text:

1: C8 Sulfonate (PFOS)

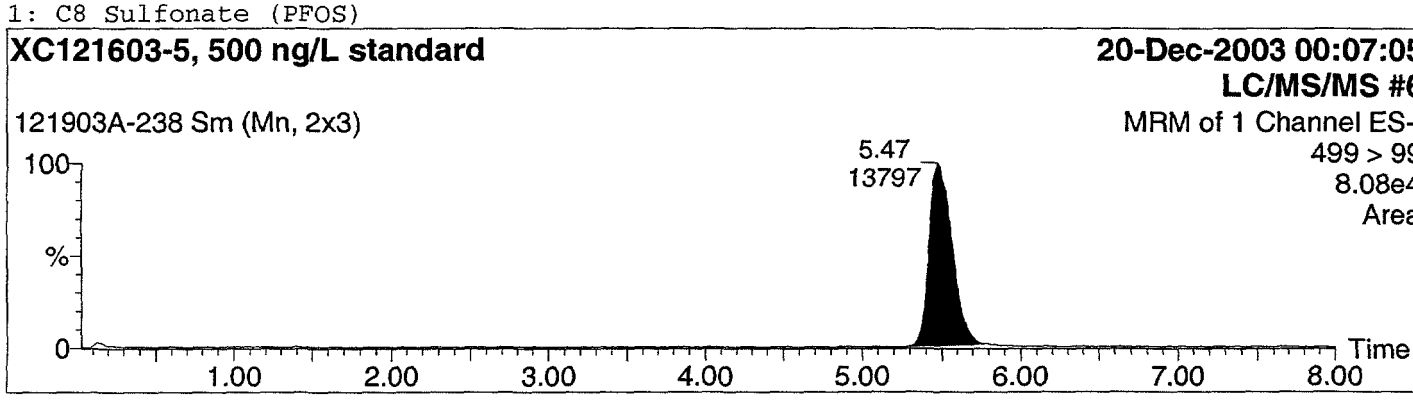


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-238
Text:

1: C8 Sulfonate (PFOS)



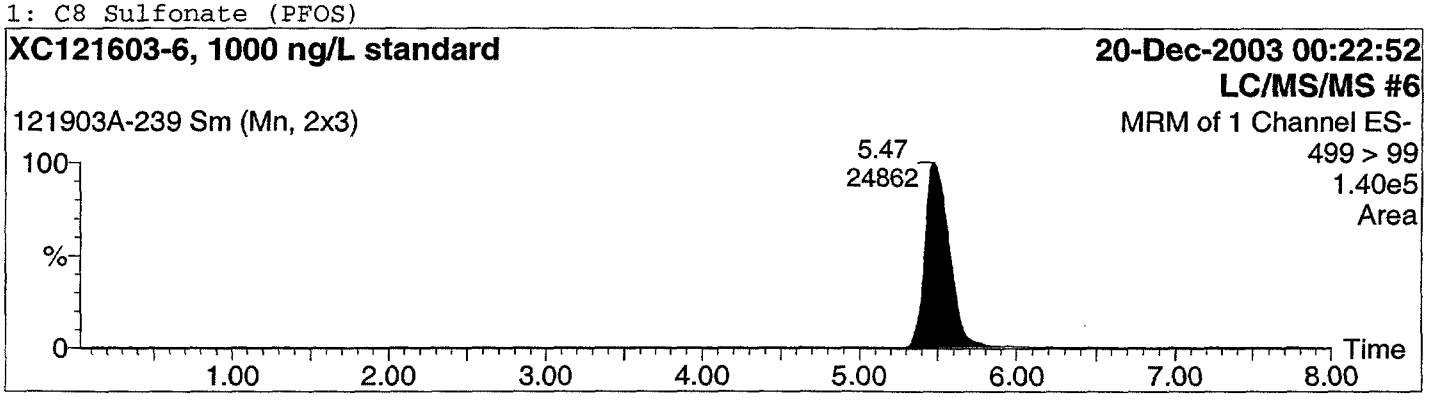
Study No.:L1278, Set No.:121903A, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903A Soil
Last modified: Mon Dec 22 08:08:13 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Mon Dec 22 07:47:40 2003
Job Code:

Printed: Mon Dec 22 08:13:24 2003

Name: 121903A-239
Text:

1: C8 Sulfonate (PFOS)



RAW DATA REPORT

Sponsor Study No:	NA	Limit of Quantitation:	50 ppt	Set No:	122203A
Exygen Study No:	L1278	Injection Volume:	15 µL	Analyst:	Karen Risha
Analyte:	PFOS	Matrix:	Soil	Instrument Type:	LC/MS/MS Unit #6
Ions Monitored:	499 -> 99	Sample Weight:	5.0 g	Extraction Date:	12/19 & 22/03
Site:	NA	Final Volume:	5.0 mL	Analyzed on:	12/24-25/03

Exygen ID	Sponsor ID	Sample Code	Run No.	Std. Conc. (ppt)	Dilution Factor	Peak Area	Analyte Found (ppt)	Amount Added (ppt)	Recovery (%)	Analyte Found (ppb)	Total Solids (%)	Analyte Found (ppb) Dry Weight
XC121603-0	-	C	122203A-501	0	-	0	-	-	-	-	-	-
XC121603-1	-	CS	122203A-502	25	-	614	-	-	-	-	-	-
XC121603-2	-	CS	122203A-503	50	-	1233	-	-	-	-	-	-
XC121603-3	-	CS	122203A-504	100	-	2324	-	-	-	-	-	-
XC121603-4	-	CS	122203A-505	250	-	5927	-	-	-	-	-	-
XC121603-5	-	CS	122203A-506	500	-	12317	-	-	-	-	-	-
XC121603-6	-	CS	122203A-507	1000	-	22881	-	-	-	-	-	-
Methanol Wash	-	C	122203A-508	-	-	0	-	-	-	-	-	-
Reagent Blank	NA	C	122203A-509	-	1	0	ND	-	-	-	-	-
Reagent Spk A	NA	LCS	122203A-510	-	1	1331	57.2	50	114	-	-	-
Reagent Spk B	NA	LCS	122203A-511	-	1	12547	547	500	109	-	-	-
L1278-1 Spk C	MW-2 (0-2)	LF	122203A-512	-	1000	11849	516000	250000	126	-	-	-
L1278-14 Spk D	MW-5 (23-25)	LF	122203A-513	-	1000	1824	78800	50000	78	-	-	-
L1278-18 Spk C	MW-4 (13-15)	LF	122203A-514	-	100	7835	34100	25000	84*	-	-	-
L1278-29 Spk D	MW-6 (9-11)	LF	122203A-515	-	1000	11743	512000	250000	121*	-	-	-
XC121603-1	-	CS	122203A-516	25	-	563	-	-	-	-	-	-
XC121603-2	-	CS	122203A-517	50	-	1053	-	-	-	-	-	-
L1278-1	MW-2 (0-2)	S	122203A-518	-	1000	4636	201000	-	-	1610	84.67	1900
L1278-1 Rep	MW-2 (0-2)	S	122203A-519	-	1000	3876	168000	-	-	1340	84.67	1590
L1278-2	MW-2 (3-5)	S	122203A-520	-	1000	5583	243000	-	-	1940	81.95	2370
L1278-3	MW-2 (8-10)	S	122203A-521	-	1000	5142	224000	-	-	1790	90.42	1980
L1278-4	MW-2 (13-15)	S	122203A-522	-	100	2452	10600	-	-	84.8	79.15	107
L1278-5	MW-2 (18-20)	S	122203A-523	-	100	3072	13300	-	-	106	80.22	133
XC121603-3	-	CS	122203A-524	100	-	2237	-	-	-	-	-	-
L1278-6	MW-2 (23-25)	S	122203A-525	-	100	2626	11400	-	-	91.2	78.89	116
L1278-7	MW-2 (28-30)	S	122203A-526	-	100	6899	30000	-	-	240	79.09	303
L1278-8	MW-2 (33-35)	S	122203A-527	-	100	2368	10200	-	-	81.6	76.81	106
L1278-9	MW-5 (0-2)	S	122203A-528	-	1000	8476	369000	-	-	2950	86.68	3410
L1278-10	MW-5 (3-5)	S	122203A-529	-	100	10552	46000	-	-	368	86.58	425
XC121603-4	-	CS	122203A-530	250	-	5902	-	-	-	-	-	-
L1278-11	MW-5 (8-10)	S	122203A-531	-	1000	4476	194000	-	-	1550	86.34	1800
L1278-12	MW-5 (13-15)	S	122203A-532	-	100	7723	33600	-	-	269	79.45	338
L1278-13	MW-5 (18-20)	S	122203A-533	-	100	8704	37900	-	-	303	75.93	399
L1278-14	MW-5 (23-25)	S	122203A-534	-	100	9136	39800	-	-	318	74.05	430
L1278-14 Rep	MW-5 (23-25)	S	122203A-535	-	100	8767	38200	-	-	306	74.05	413
XC121603-5	-	CS	122203A-536	500	-	11325	-	-	-	-	-	-
XC121603-6	-	CS	122203A-537	1000	-	22082	-	-	-	-	-	-

Analyte Found (ppt) = (peak area - intercept) / slope x DF

Recovery (%) = [analyte found (ppt)-analyte found in control (ppt)] x 100 / amount added (ppt)

Standard Curve: Linear (1/x weighted)
Intercept = 19.3902
Slope = 22.9155
Coef. Of Det. = 0.997870

Analyte Found (ppb) = [analyte found (ppt) x volume extracted (0.04 L)] / sample weight (5 g)
Analyte Found (ppb) dry weight = analyte found (ppb) x (100% / total solids (%))

CS = Calibration standard
C = Control sample
S = Sample
LF = Lab fortified sample
FF = Field fortified sample
LCS = Laboratory Control Spike
CK = Check Standard
ND = Not detected = Response between 0 and 25 ppt
NQ = Not quantifiable = Response between 25 ppt and LOQ (50 ppt)

*Sample was corrected using the data found in set 121903AR.

Spreadsheet prepared by: KR, 12/30/03

Exygen™ RESEARCH
3058 Research Drive
State College, PA 16801
Phone: 814-272-1039
Fax: 814-231-1580

Internal Chain of Custody/Fortification Sheet

Exygen Study Number: L1278 Matrix: Soil
Sponsor Study/Protocol No: NA
The samples listed below were removed from refrigerator No. 32
Time 0900 Date 12/22/03 Initials KF

CLIENT SAMPLE ID	EXYGEN ID NUMBER	WEIGHT (g)	FORTIFICATION (ng)
na	Reagent Blank	-	-
na	Reagent Spk A	-	2.0
na	Reagent Spk B	-	20.0
MW-2 (0-2)	L1278-1 Spk C	5.0	10000.0
MW-5 (23-25)	L1278-14 Spk D	5.0	2000.0
MW-4 (13-15)	L1278-18 Spk C	5.0	1000.0
MW-6 (9-11)	L1278-29 Spk D	5.0	10000.0
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

	Spiking Solution Used	Volume Used for Spiking	Initial/Date
Reagent Spk A	F061703-10 (10 ng/mL)	200 µL (200 µL micropipet)	KF /12/22/03
Reagent Spk B	F061703-9 (100 ng/mL)	200 µL (200 µL micropipet)	KF /12/22/03
L1278-1 Spk C	F061703-6 (100000 ng/mL)	100 µL (200 µL micropipet)	KF /12/22/03
L1278-14 Spk D	F061703-7 (10000 ng/mL)	200 µL (200 µL micropipet)	KF /12/22/03
L1278-18 Spk C	F061703-7 (10000 ng/mL)	100 µL (200 µL micropipet)	KF /12/22/03
L1278-29 Spk D	F061703-6 (100000 ng/mL)	100 µL (200 µL micropipet)	KF /12/22/03

All samples were weighed on balance No. 20
Time 0915 Date 12/22/03 Initials KF

After weighing samples were returned to refrigerator No. 32
Time 1330 Date 12/22/03 Initials KF

Comments: 200 µL of 250 mg/mL sodium thiosulfate was added to all samples before spiking. Initials/Date: KF 12/22/03

Analysis Summary: Data Set: 122403A 2@KF 12/24/03 Initials/Date: KF / 12/24/03
Data Set: - Initials/Date: - / -
Data Set: - Initials/Date: - / -

Set extraction/analysis data verified by: JMF Date: 12/30/03

July 26, 2001/1

000400

Exygen RESEARCH
3058 Research Drive Phone: 814-272-1039
State College, PA 16801 Fax: 814-231-1580

SAMPLE EXTRACTION AND ANALYSIS TRACKING SHEET

EXYGEN STUDY NUMBER: L1278 METHOD: 01M-008-046 Rev 1 (Modified) PROTOCOL NUMBER: NA
MATRIX: Soil ANALYTES: PFOS

Client ID	Exygen ID	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	Dilutions (mL/mL)	STEP 7	Dilutions (mL/mL)	STEP 8	Reagents/ Materials	Lot #
na	Reagent Blank	↓	↓	↓	↓	↓	↓	-	↓	-	-	Methanol	43308345
na	Reagent Spk A	↓	↓	↓	↓	↓	↓	-	↓	-	-	C18 SPE	W316TB1
na	Reagent Spk B	↓	↓	↓	↓	↓	↓	-	↓	-	-	Type I Water	NA
MW-2 (0-2)	L1278-1 Spk C	↓	↓	↓	↓	↓	↓	(1) 0.1/10, 0.1/1.0	↓	-	-	-	-
MW-5 (23-25)	L1278-14 Spk D	↓	↓	↓	↓	↓	↓	(1) 0.1/10, 0.1/1.0	↓	-	-	-	-
MW-4 (13-15)	L1278-18 Spk C	↓	↓	↓	↓	↓	↓	0.1/10	↓	-	-	-	-
MW-6 (9-11)	L1278-29 Spk D	↓	↓	↓	↓	↓	↓	(1) 0.1/10, 0.1/1.0	↓	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	*Initials/Date*	CEE 12/22/03
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	**HPLC**	
-	-	-	-	-	-	-	-	-	-	-	-	Methanol	43308345
-	-	-	-	-	-	-	-	-	-	-	-	Ammonium Acetate	V36159
-	-	-	-	-	-	-	-	-	-	-	-	Type I water	NA
-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initials/Date	-	CEE 12/22/03	CEE 12/22/03	CEE 12/22/03	CEE 12/22/03	CEE 12/22/03	CEE 12/22/03	KR 12/22/03	KR 12/24/03	-	-	*Initials/Date*	KR 12/24/03

DDF=1000 KR 12/22/03

STEP 1: Add 5mL of methanol and shake by hand for ~1 minute
STEP 2: Bring up to 40 mL with hypercarb filtered type I water
STEP 3: Centrifuge for 10 minutes at ~3000 rpm
STEP 4: Filter through glass acrodisc
STEP 5: SPE column clean up
STEP 6: Final volume to 5 mL collected in 15 mL polypropolene tubes
STEP 7: LC/MS/MS analysis
STEP 8: LC/MS/MS reanalysis.

Final extracts stored in refrigerator 32 Initials: CEE Date: 12/22/03

*Initials and date under each step indicates the personnel that performed this step.
COMMENTS:

000401

Masslynx - Sample List

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\122203A Soil.SPL
Printed: Wed Dec 24 09:53:11 2003 12/24/03

Exygen STUDY NO. L1278

Page Position: (1, 1)

	Vial	File Name	LIMS ID	Client ID	Sample Description	Matrix	Sample Type	Conc (ng/L)	Conc B	Conc C	Test ID	DF	MS Method
1	1	122203A-501	---	---	XC121603-0, 0 ng/L standard	---	Blank	0	---	---	0	1	PFOS
2	2	122203A-502	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
3	3	122203A-503	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
4	4	122203A-504	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
5	5	122203A-505	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
6	6	122203A-506	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
7	7	122203A-507	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS
8	92	122203A-508	---	---	Methanol Wash	---	Blank	---	---	---	0	1	PFOS
9	71	122203A-509	---	---	Reagent Blank	---	Blank	---	---	---	0	1	PFOS
10	72	122203A-510	---	---	Reagent Spk A, 50 ng/L	---	QC	50	---	---	0	1	PFOS
11	73	122203A-511	---	---	Reagent Spk B, 500 ng/L	---	QC	500	---	---	0	1	PFOS
12	74	122203A-512	---	---	L1278-1 Spk C, 250000 ng/L, DF=1000	---	QC	250000	---	---	0	1000	PFOS
13	75	122203A-513	---	---	L1278-14 Spk D, 50000 ng/L, DF=1000	---	QC	50000	---	---	0	1000	PFOS
14	76	122203A-514	---	---	L1278-18 Spk C, 25000 ng/L, DF=100	---	QC	25000	---	---	0	100	PFOS
15	77	122203A-515	---	---	L1278-29 Spk D, 250000 ng/L, DF=1000	---	QC	250000	---	---	0	1000	PFOS
16	2	122203A-516	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
17	3	122203A-517	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
18	78	122203A-518	---	---	L1278-1, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
19	79	122203A-519	---	---	L1278-1 Rep, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
20	80	122203A-520	---	---	L1278-2, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
21	81	122203A-521	---	---	L1278-3, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
22	82	122203A-522	---	---	L1278-4, DF=100	---	Analyte	---	---	---	0	100	PFOS
23	83	122203A-523	---	---	L1278-5, DF=100	---	Analyte	---	---	---	0	100	PFOS
24	4	122203A-524	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
25	84	122203A-525	---	---	L1278-6, DF=100	---	Analyte	---	---	---	0	100	PFOS
26	85	122203A-526	---	---	L1278-7, DF=100	---	Analyte	---	---	---	0	100	PFOS
27	86	122203A-527	---	---	L1278-8, DF=100	---	Analyte	---	---	---	0	100	PFOS
28	87	122203A-528	---	---	L1278-9, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
29	88	122203A-529	---	---	L1278-10, DF=100	---	Analyte	---	---	---	0	100	PFOS
30	5	122203A-530	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
31	89	122203A-531	---	---	L1278-11, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
32	90	122203A-532	---	---	L1278-12, DF=100	---	Analyte	---	---	---	0	100	PFOS
33	8	122203A-533	---	---	L1278-13, DF=100	---	Analyte	---	---	---	0	100	PFOS
34	9	122203A-534	---	---	L1278-14, DF=100	---	Analyte	---	---	---	0	100	PFOS
35	10	122203A-535	---	---	L1278-14 Rep, DF=100	---	Analyte	---	---	---	0	100	PFOS
36	6	122203A-536	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
37	7	122203A-537	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\122203A Soil.SPL
Printed: Wed Dec 24 09:53:11 2003 12/24/03

Page Position: (2, 1)

Exygen STUDY NO. L1278

	HPLC Method	MS Tune File	Inj.Volume
1	PFOSand PFOA	Fluorochems	15
2	PFOSand PFOA	Fluorochems	15
3	PFOSand PFOA	Fluorochems	15
4	PFOSand PFOA	Fluorochems	15
5	PFOSand PFOA	Fluorochems	15
6	PFOSand PFOA	Fluorochems	15
7	PFOSand PFOA	Fluorochems	15
8	PFOSand PFOA	Fluorochems	15
9	PFOSand PFOA	Fluorochems	15
10	PFOSand PFOA	Fluorochems	15
11	PFOSand PFOA	Fluorochems	15
12	PFOSand PFOA	Fluorochems	15
13	PFOSand PFOA	Fluorochems	15
14	PFOSand PFOA	Fluorochems	15
15	PFOSand PFOA	Fluorochems	15
16	PFOSand PFOA	Fluorochems	15
17	PFOSand PFOA	Fluorochems	15
18	PFOSand PFOA	Fluorochems	15
19	PFOSand PFOA	Fluorochems	15
20	PFOSand PFOA	Fluorochems	15
21	PFOSand PFOA	Fluorochems	15
22	PFOSand PFOA	Fluorochems	15
23	PFOSand PFOA	Fluorochems	15
24	PFOSand PFOA	Fluorochems	15
25	PFOSand PFOA	Fluorochems	15
26	PFOSand PFOA	Fluorochems	15
27	PFOSand PFOA	Fluorochems	15
28	PFOSand PFOA	Fluorochems	15
29	PFOSand PFOA	Fluorochems	15
30	PFOSand PFOA	Fluorochems	15
31	PFOSand PFOA	Fluorochems	15
32	PFOSand PFOA	Fluorochems	15
33	PFOSand PFOA	Fluorochems	15
34	PFOSand PFOA	Fluorochems	15
35	PFOSand PFOA	Fluorochems	15
36	PFOSand PFOA	Fluorochems	15
37	PFOSand PFOA	Fluorochems	15

LC/MS/MS SYSTEM AND OPERATING CONDITIONS

Sponsor Protocol No: NA | Exygen Study No: L1278

Instrument:	Micromass Quattro Ultima (LC/MS/MS Unit #6)
Computer:	COMPAQ Professional Workstation AP200
Software:	Microsoft Windows NT: Version 4 Build 1381: Service Pack 5 Micromass Limited: MassLynx 3.4 Build 004
HPLC Equipment:	Hewlett Packard (HP) Series 1100 HP Bin Pump — HP Vacuum Degasser HP Autosampler — HP Column Oven
HPLC Column:	Genesis C-8, 5 cm x 2.1 mm i.d. x 4 µ (Exygen ID: 74A) (JONESCHROMATOGRAPHY: Part No. FK5962E)
Mobile Phase (A) :	2 mM Ammonium Acetate in Type I Water
Mobile Phase (B) :	Methanol
Analyst:	Karen Risha Exygen Research 3058 Research Drive, State College, PA 16801 Phone: (814) 272-1039 FAX: (814) 231-1580

KR 12/24/03

NOTE: The next 3 pages are computer generated printouts from the masslynx software program. The pages contain the instrument settings used for the analysis of this data set.

All Handwritten Peak ID's by: KR 12/30/03

Scanning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\PFOS
Last Modified: Thu Dec 18 14:43:11 2003

Printed: Wed Dec 24 09:53:55 2003 KJC 12/24/03

Solvent Delay (mins) : 0.00

Analog Channel 4 : Unused
Function : 1 MRM of 1 Mass Pair (ESP-)

Inter Channel Delay (Secs) : 0.03
Span (Daltons) : 0.00
Start Time (Mins) : 0.00
End Time (Mins) : 8.00
Repeats : 1

Channel	Parent	Daughter	Dwell (Secs)	Coll Energy (eV)	Cone (V)
1	499.00	99.00	0.20	40	30

Method File: c:\masslynx\fluorochemicals.pro\acqudb\pfosand pfoa
Last Modified: Wednesday, December 24, 2003 09:54:01

Printed: Wednesday, December 24, 2003 09:54:05 KJ 12/24/03

HP1100 LC Pump Initial Conditions

Solvents	
A%	60.0
B%	40.0
C%	0.0
D%	0.0
Flow (ml/min)	0.300
Stop Time (mins)	14.0
Min Pressure (bar)	0
Max Pressure (bar)	400
Oven Temperature Left(°C)	35.0
Oven Temperature Right(°C)	35.0

HP1100 LC Pump Gradient Timetable

The gradient Timetable contains 9 entries which are :

Time	A%	B%	C%	D%	Flow	Pressure
0.00	60.0	40.0	0.0	0.0	0.300	400
0.40	60.0	40.0	0.0	0.0	0.300	400
1.00	10.0	90.0	0.0	0.0	0.300	400
7.00	10.0	90.0	0.0	0.0	0.300	400
7.50	0.0	100.0	0.0	0.0	0.300	400
9.00	0.0	100.0	0.0	0.0	0.400	400
9.50	60.0	40.0	0.0	0.0	0.400	400
13.50	60.0	40.0	0.0	0.0	0.400	400
14.00	60.0	40.0	0.0	0.0	0.300	400

HP1100 LC Pump External Event Timetable

The Timetable contains 6 entries which are :

Time	Column Switch	Contact1	Contact2	Contact3	Contact4
Initial	Off	Off	Off	Off	Off
0.00	Off	On	Off	Off	Off
0.05	Off	Off	Off	Off	Off
0.10	Off	Off	On	Off	Off
7.95	Off	Off	Off	On	Off
8.00	Off	Off	Off	Off	Off

HP1100 Autosampler Initial Conditions

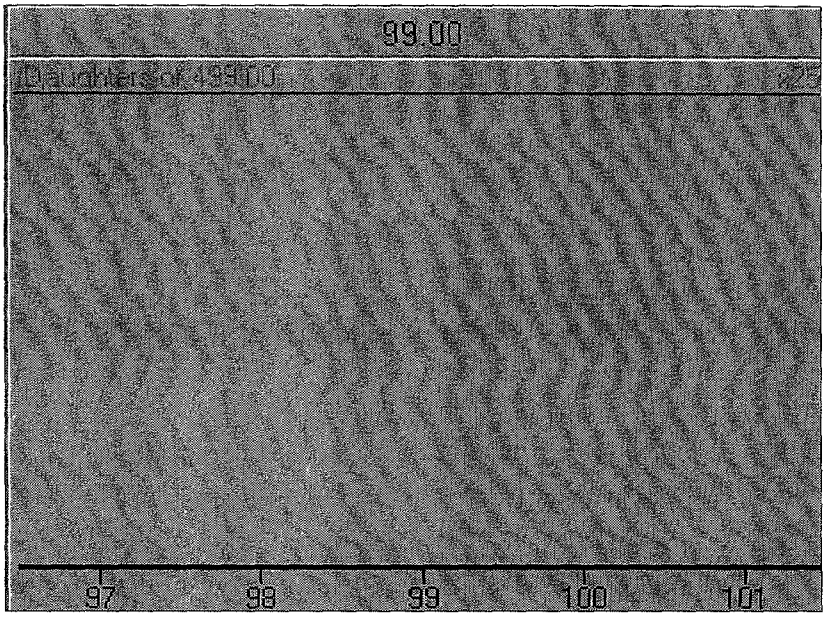
Draw Speed	200.0
Eject Speed (µl/min)	200
Draw Position (mm)	0.50
Stop Time (mins)	14.00
Injection Volume(µl)	15.0
Vial Number	7

Tuning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\FLUOROCHEMS

Printed: Wed Dec 24 09:54:20 2003

KJC 12/24/03



Dau 499.00

SOURCE (ESP-)	**Set**	**Rdbk**	**Analyser**	**Set**	**Rdbk**
Capillary	3.00	-2.93	LM Res 1	14.0	
Cone	20	-51	HM Res 1	14.0	
Hexapole 1	0.0		IEnergy 1	1.0	
Aperture 1	0.0		Entrance	-2	28
Hexapole 2	0.0		Collision	15	29
Source Block Temp.	100	100	Exit	2	31
Desolvation Temp.	300	299	LM Res 2	14.0	
			HM Res 2	14.0	
			IEnergy 2	2.0	
			Multiplier	650	-648

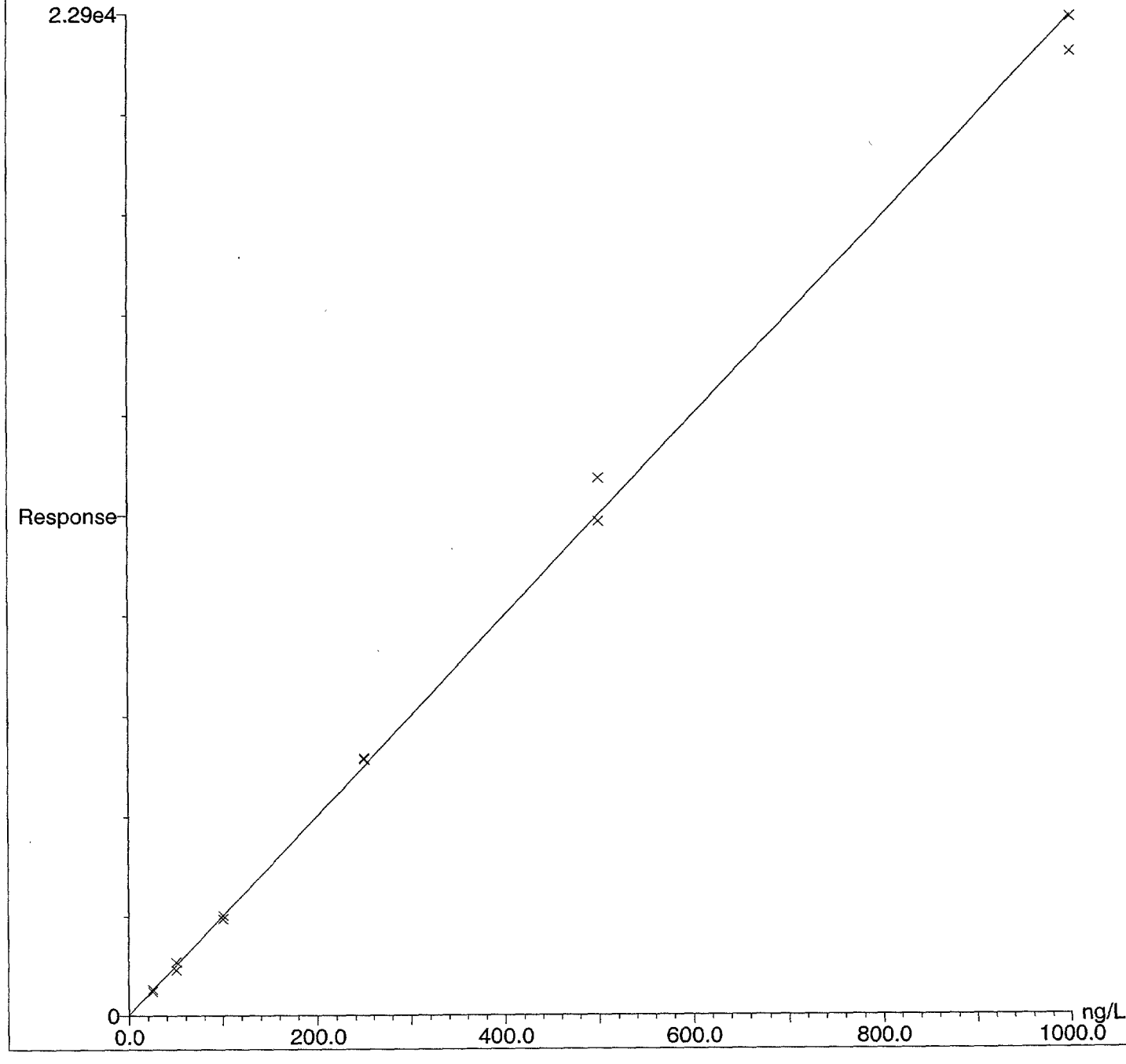
Pressures	**Rdbk**	**Gas Flows**	**Rdbk**
Analyser Vacuum	OFF	Cone Gas	132.1
Gas Cell	3.0e-3	Desolvation	760.1

Quantify Calibration Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Calibration: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\CurveDB\122203A
Last modified: Tue Dec 30 08:05:18 2003
Printed: Tue Dec 30 08:09:46 2003

KGC 12/30/03

Compound 1 name: C8 Sulfonate (PFOS)
Coefficient of Determination: 0.997870
Calibration curve: 22.9155 * x + 19.3902
Response type: External Std, Area
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

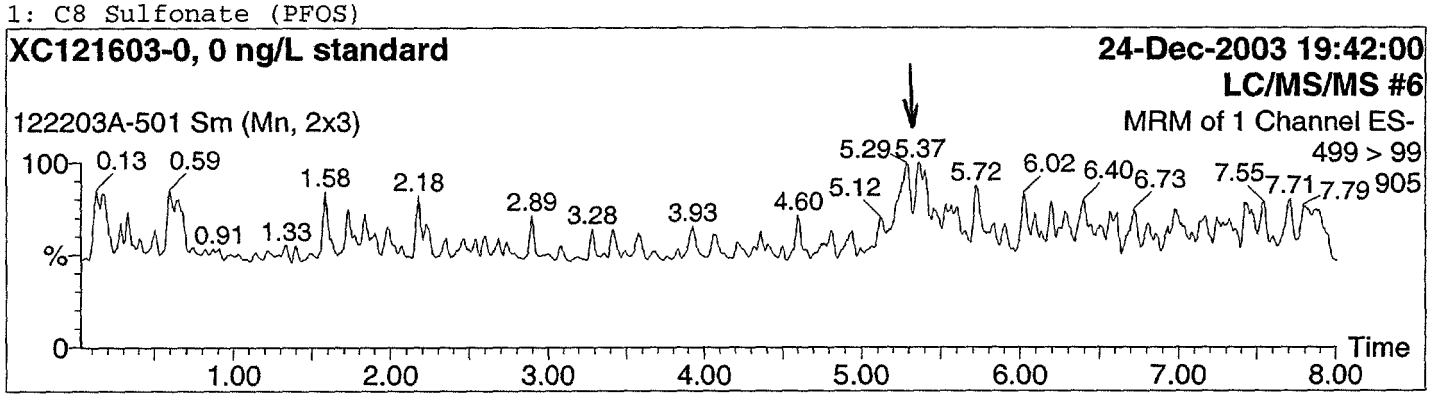
Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Initials
Date 12/30/03
Run# 122203A-501 To 122203A-537

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-501
Text:

1: C8 Sulfonate (PFOS)



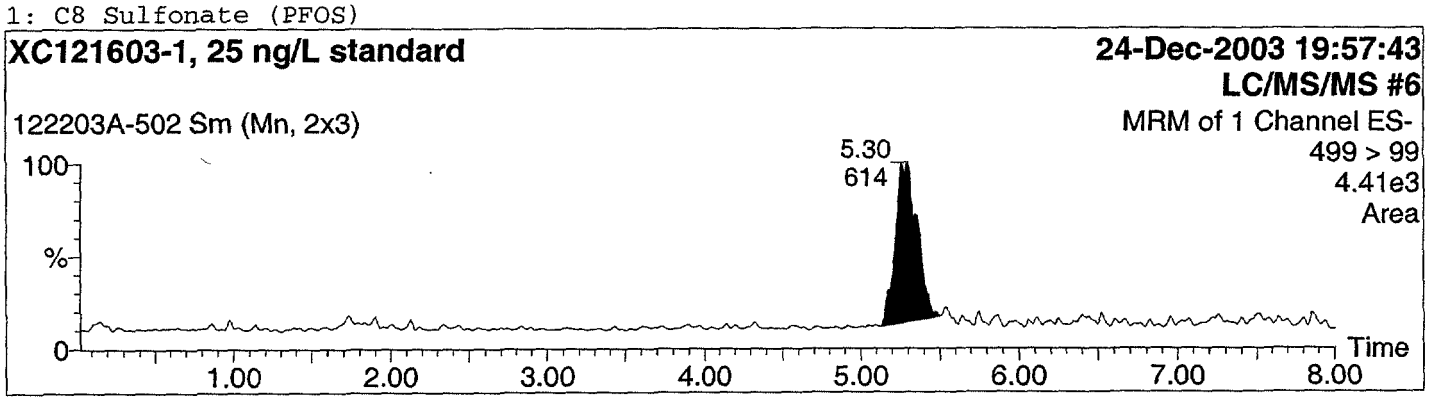
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-502
Text:

1: C8 Sulfonate (PFOS)



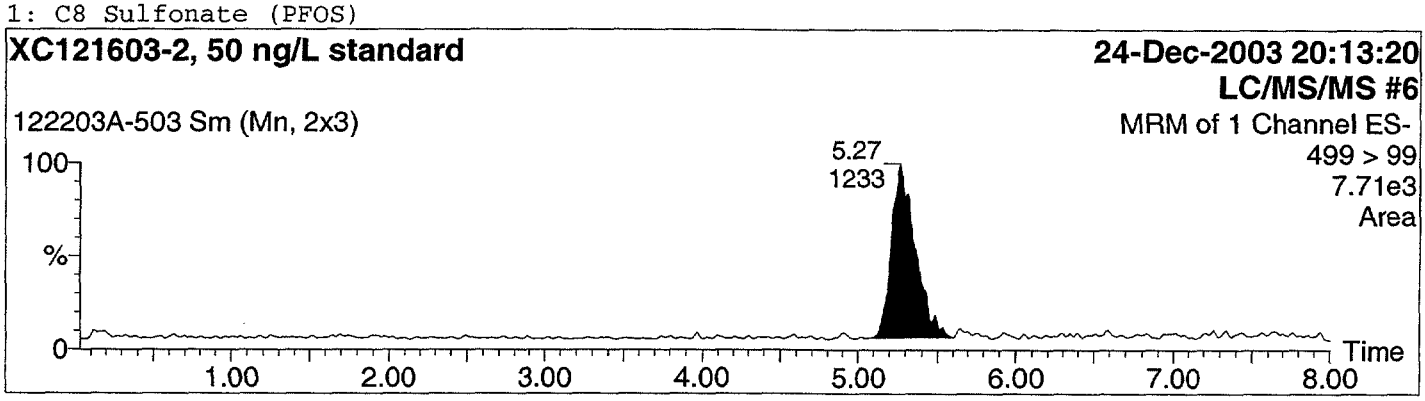
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-503
Text:

1: C8 Sulfonate (PFOS)



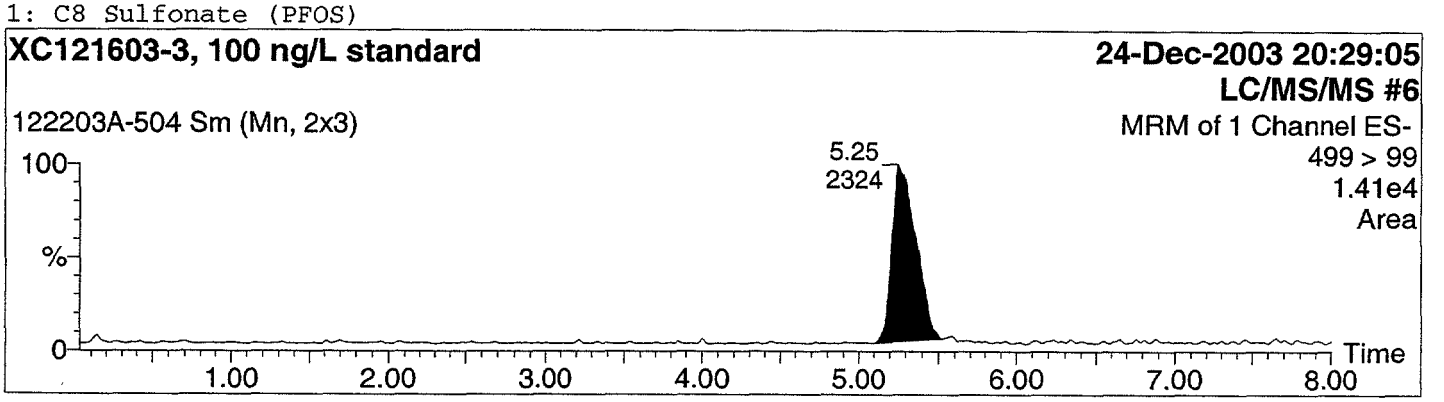
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-504
Text:

1: C8 Sulfonate (PFOS)



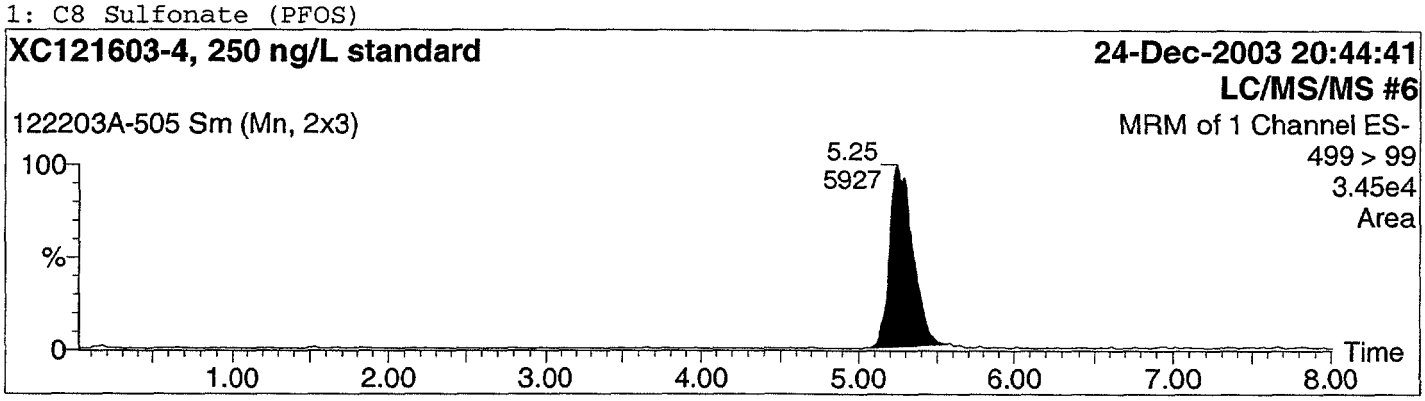
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-505
Text:

1: C8 Sulfonate (PFOS)



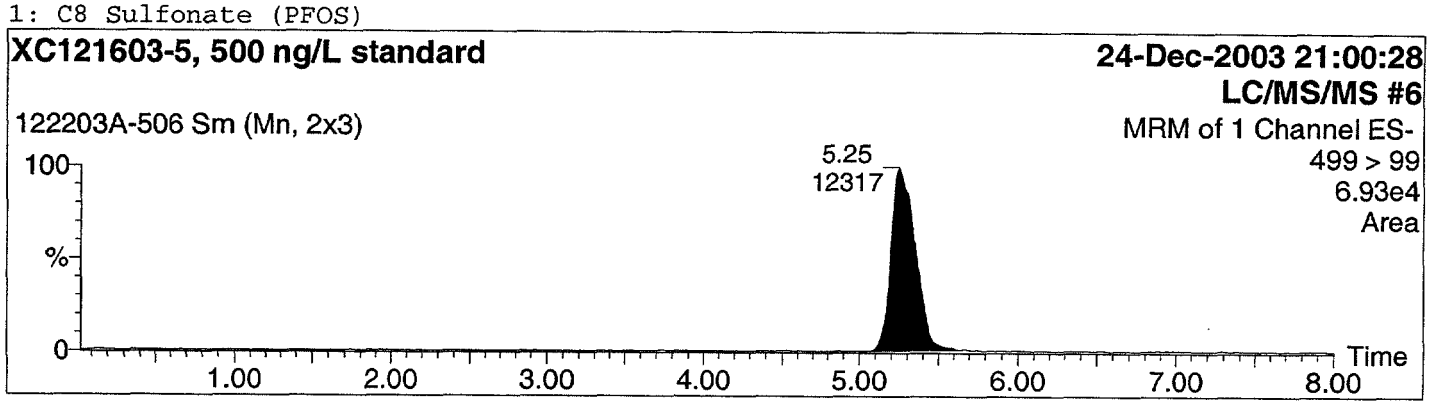
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-506
Text:

1: C8 Sulfonate (PFOS)



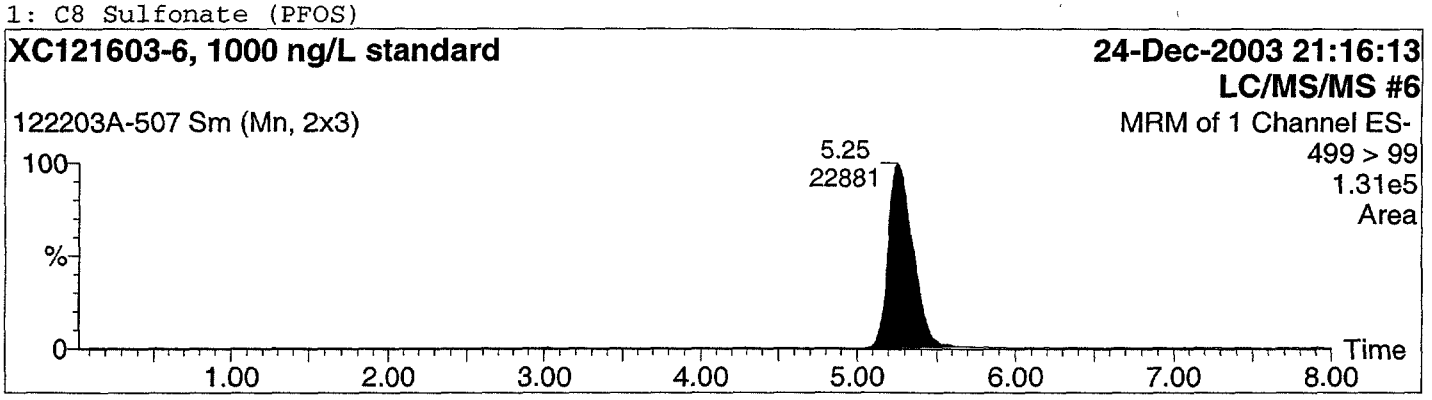
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-507
Text:

1: C8 Sulfonate (PFOS)

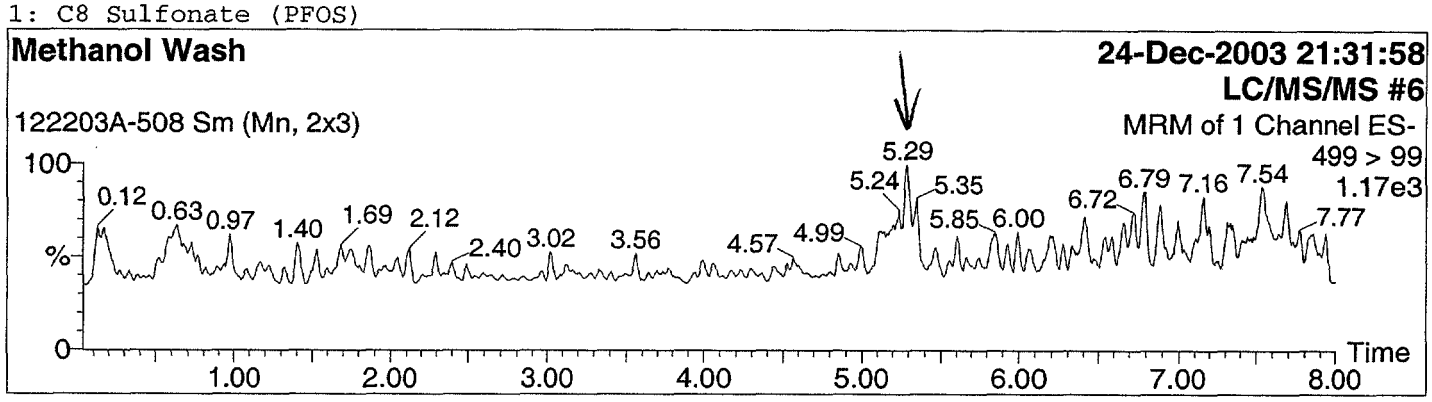


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-508
Text:

1: C8 Sulfonate (PFOS)



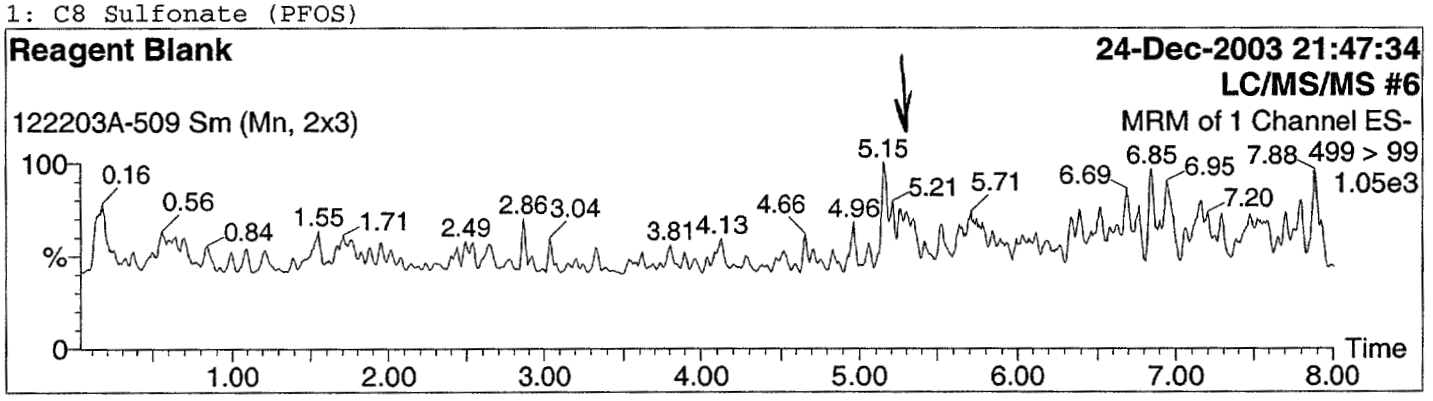
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-509
Text:

1: C8 Sulfonate (PFOS)



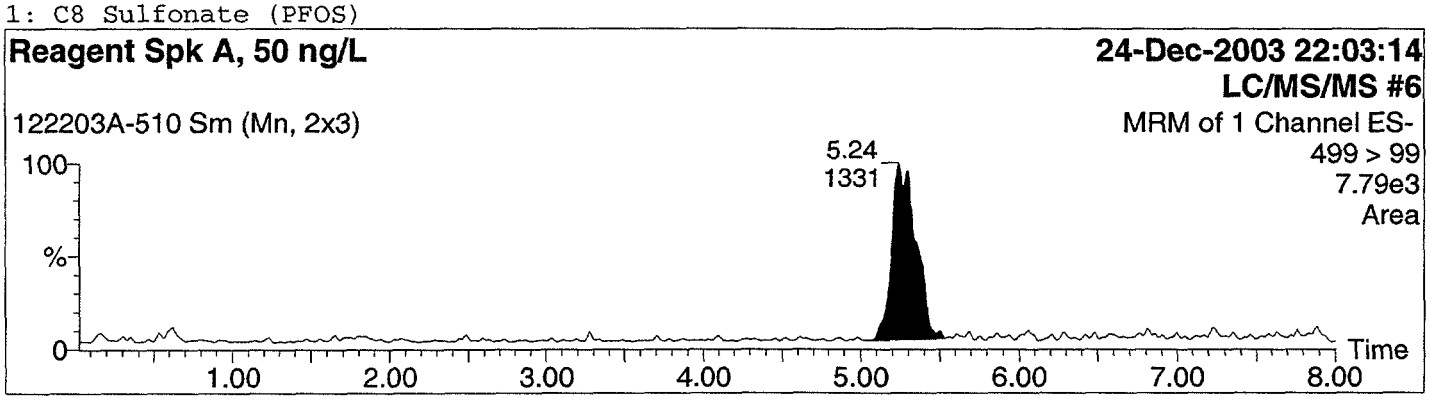
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-510
Text:

1: C8 Sulfonate (PFOS)



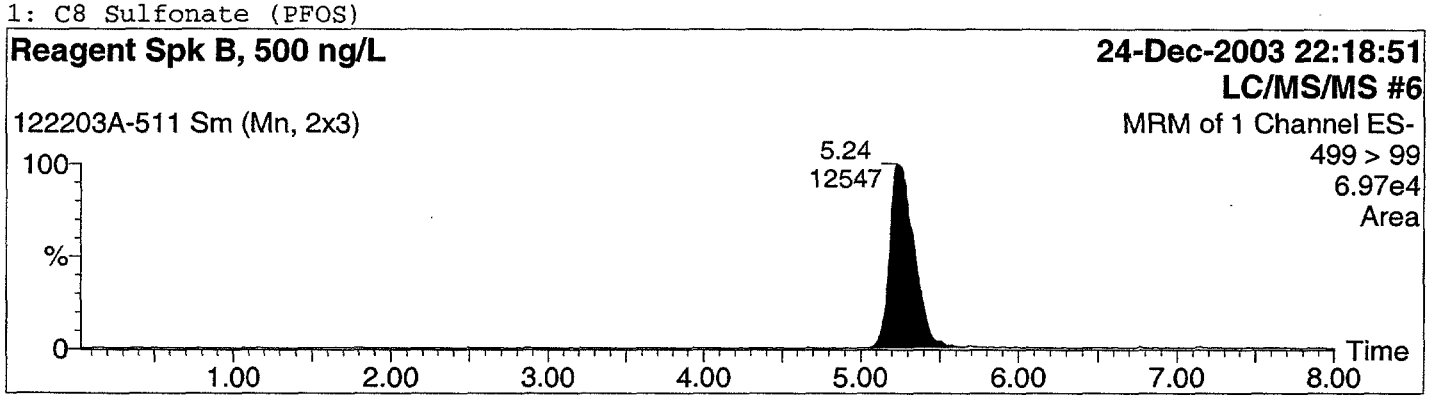
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-511
Text:

1: C8 Sulfonate (PFOS)



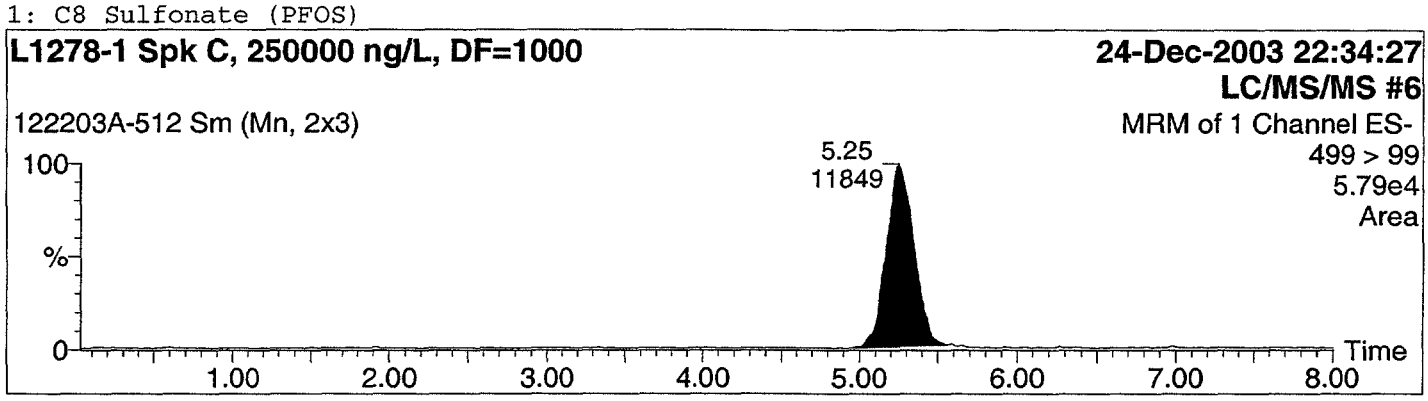
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-512
Text:

1: C8 Sulfonate (PFOS)



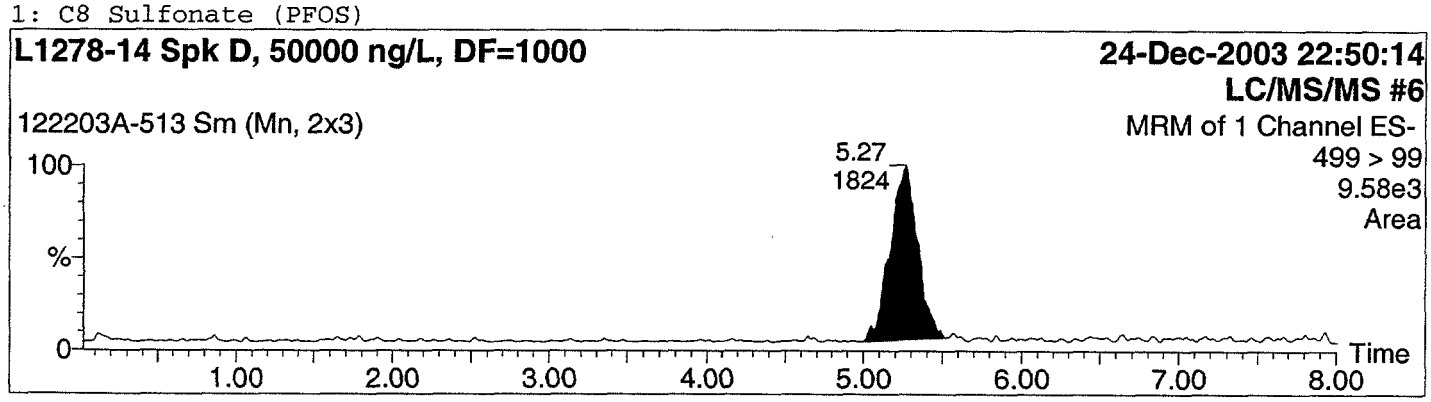
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-513
Text:

1: C8 Sulfonate (PFOS)



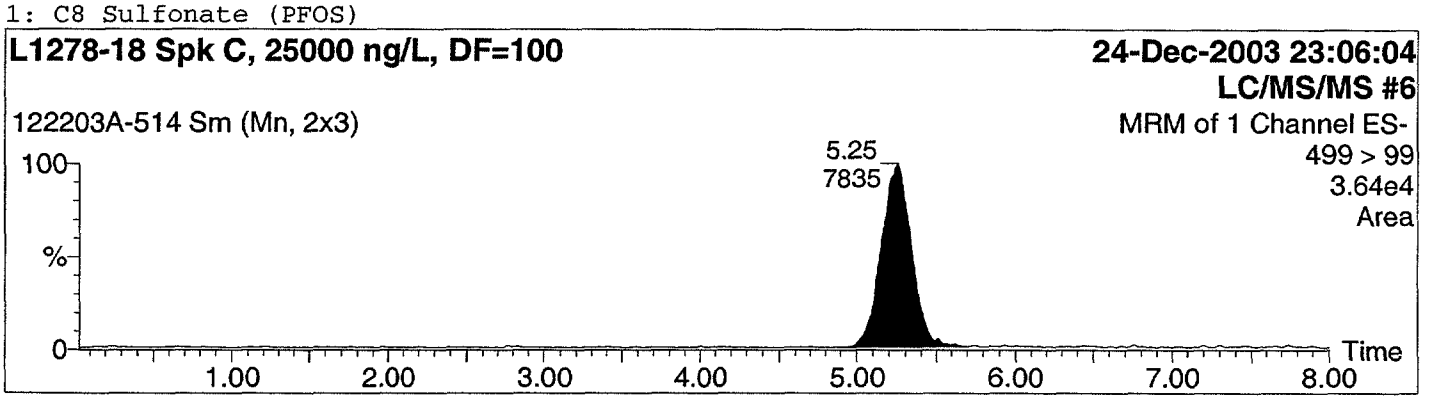
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-514
Text:

1: C8 Sulfonate (PFOS)



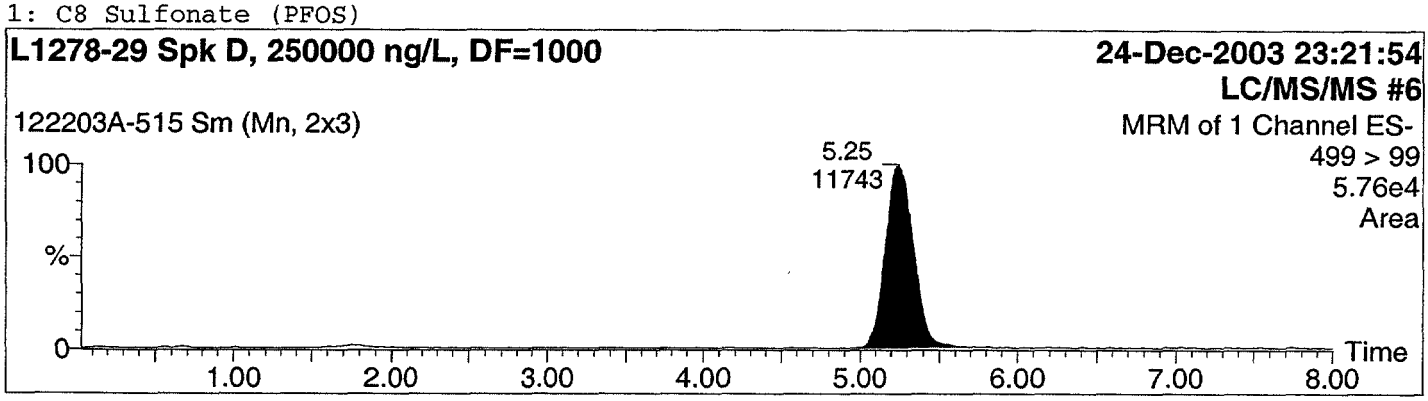
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-515
Text:

1: C8 Sulfonate (PFOS)



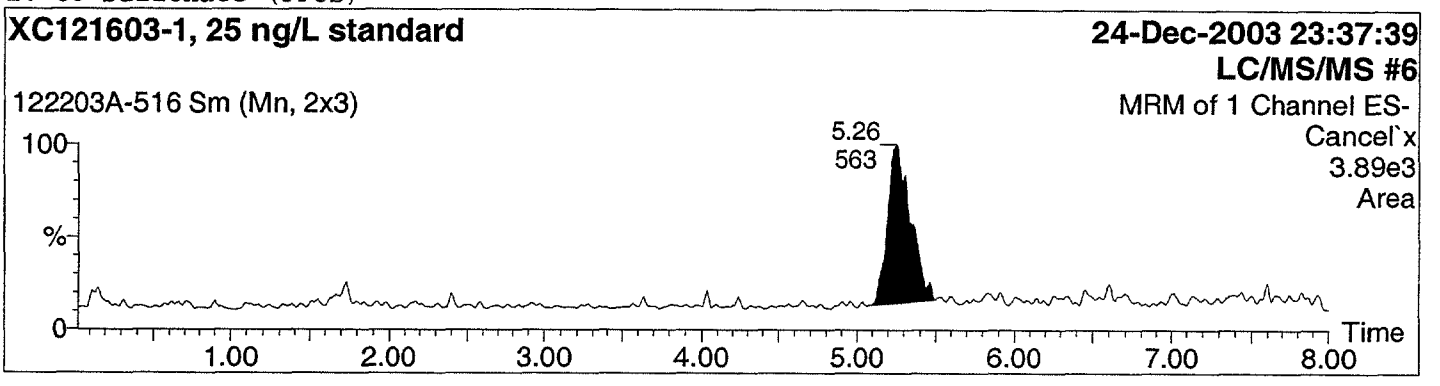
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-516
Text:

1: C8 Sulfonate (PFOS)



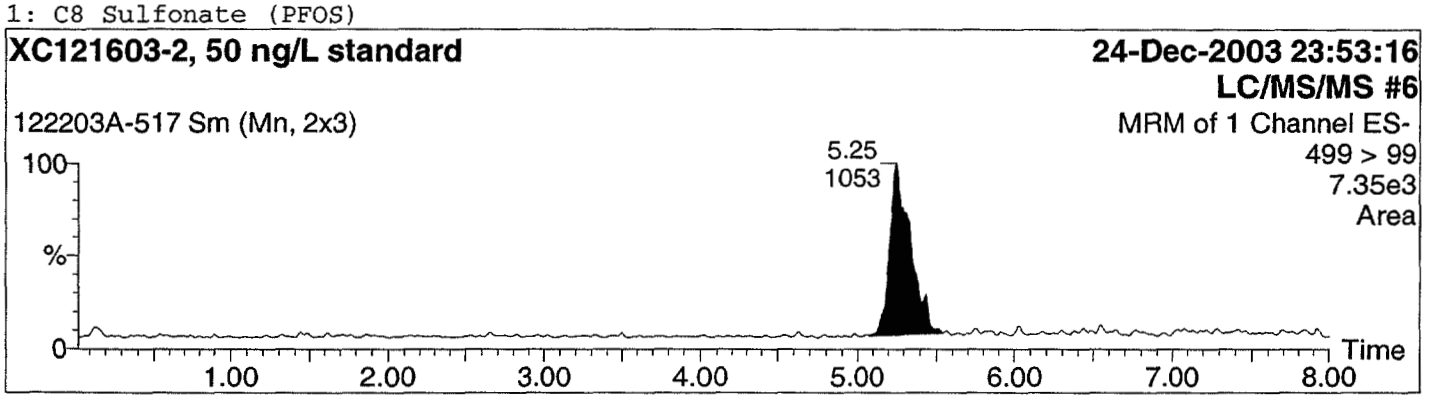
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-517
Text:

1: C8 Sulfonate (PFOS)



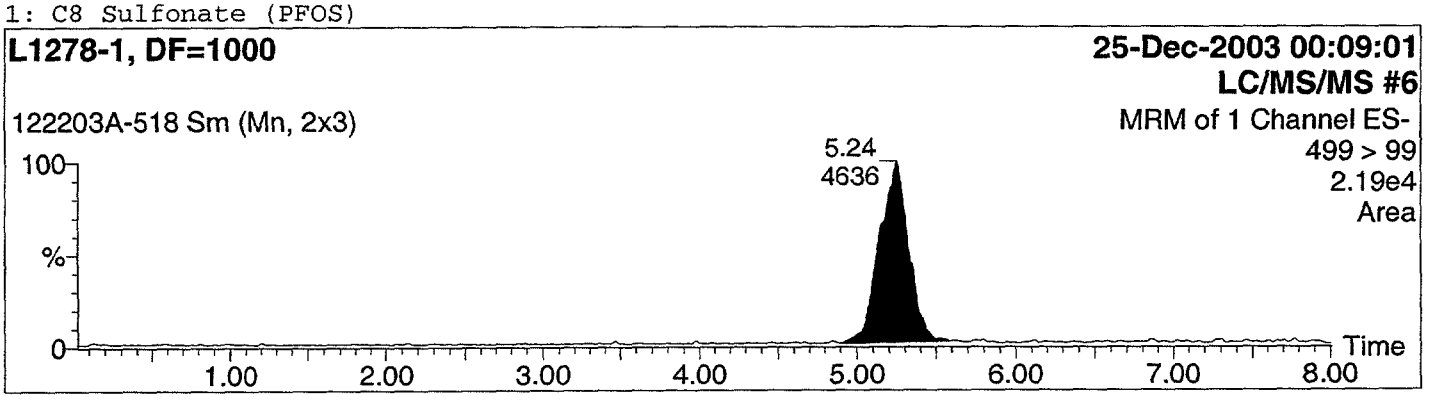
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-518
Text:

1: C8 Sulfonate (PFOS)

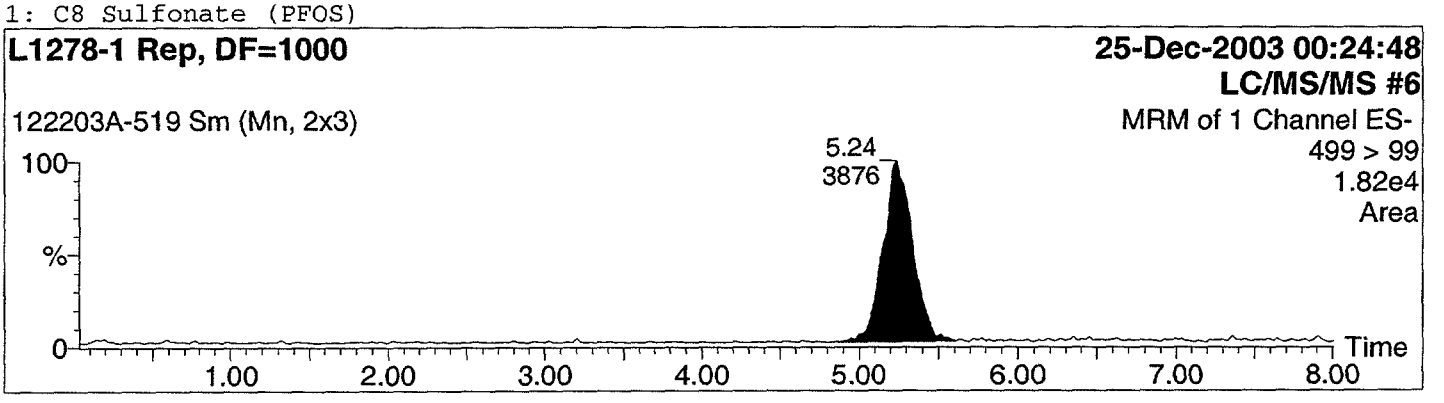


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-519
Text:

1: C8 Sulfonate (PFOS)



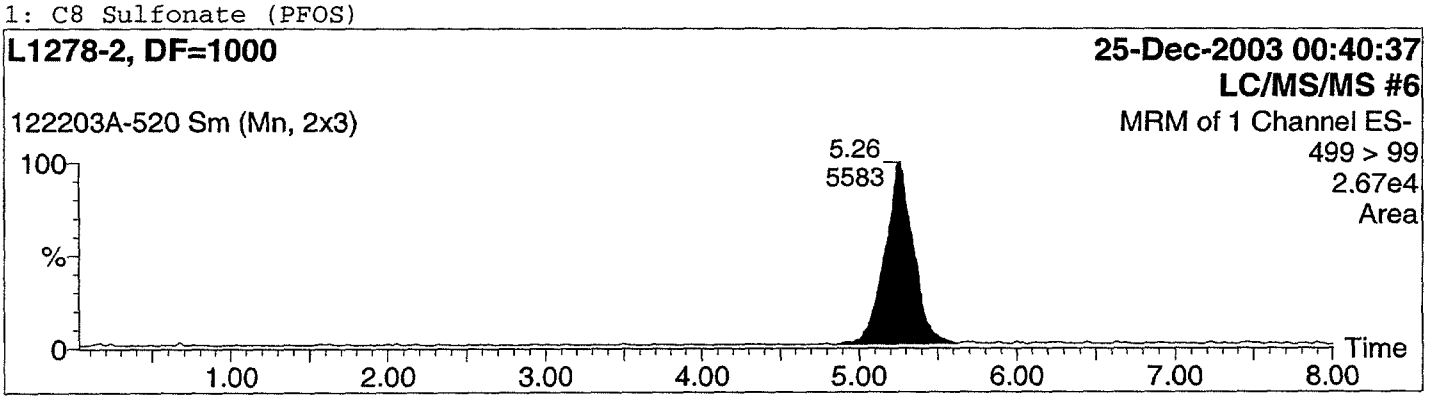
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-520
Text:

1: C8 Sulfonate (PFOS)



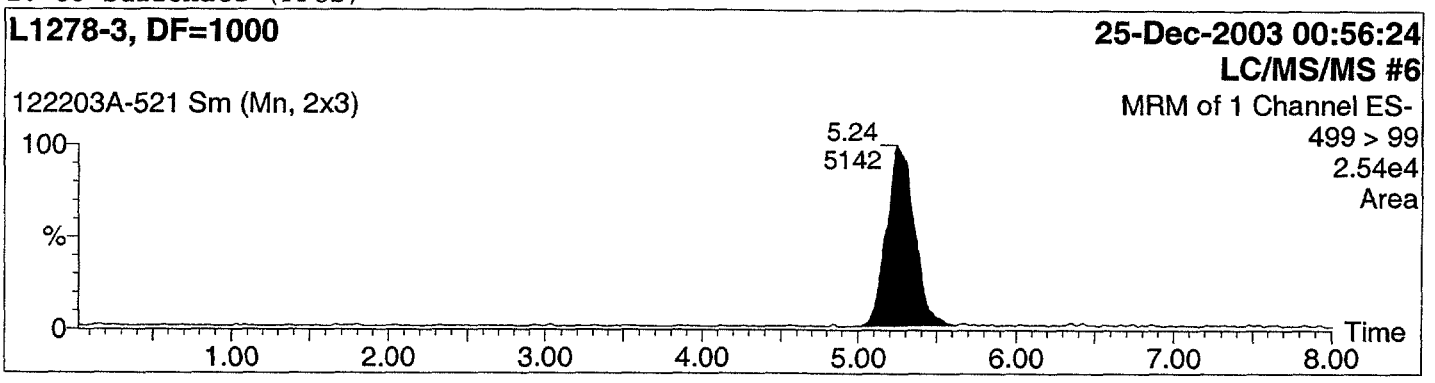
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-521
Text:

1: C8 Sulfonate (PFOS)



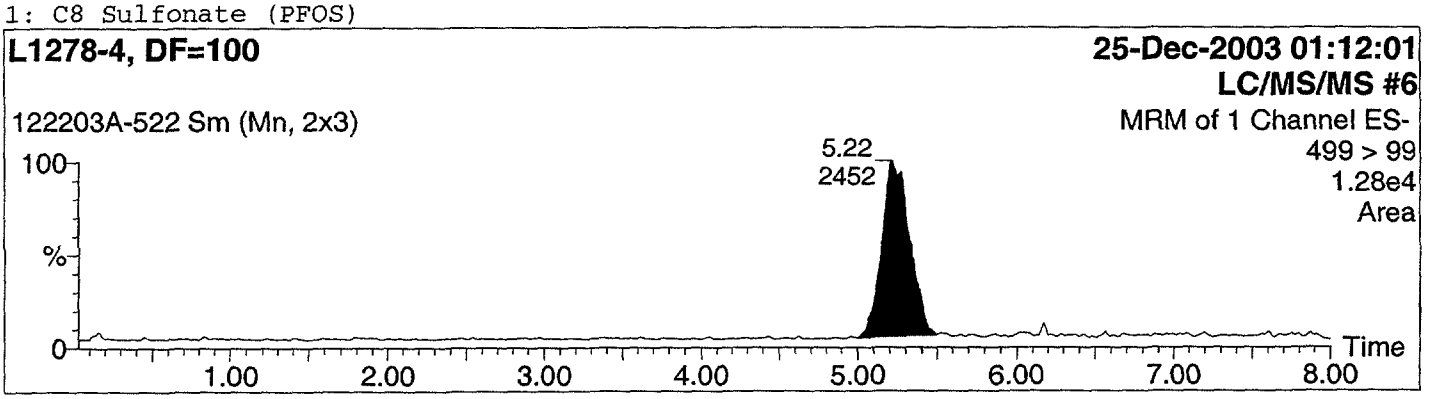
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-522
Text:

1: C8 Sulfonate (PFOS)



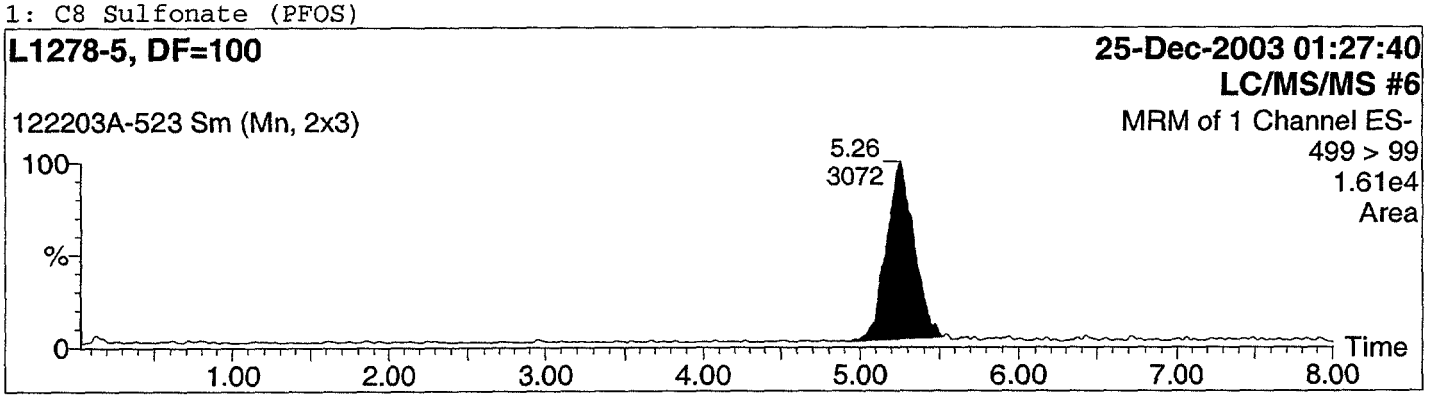
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-523
Text:

1: C8 Sulfonate (PFOS)

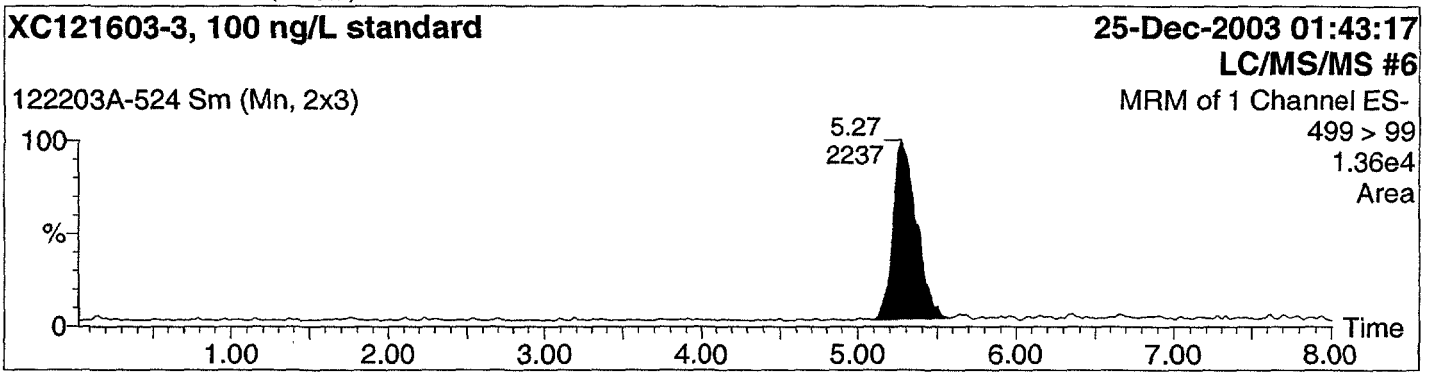


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-524
Text:

1: C8 Sulfonate (PFOS)



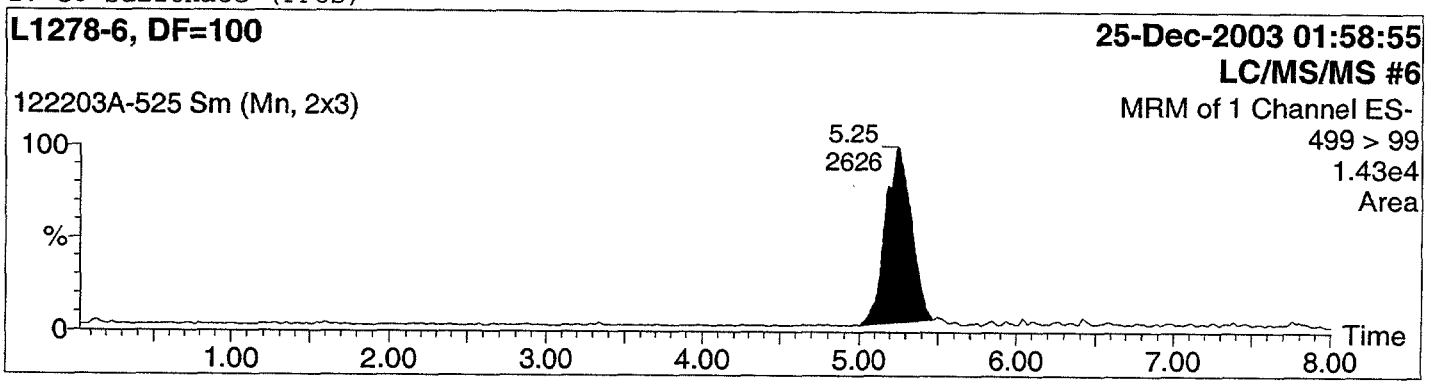
Quantify Sample Report
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-525
Text:

1: C8 Sulfonate (PFOS)

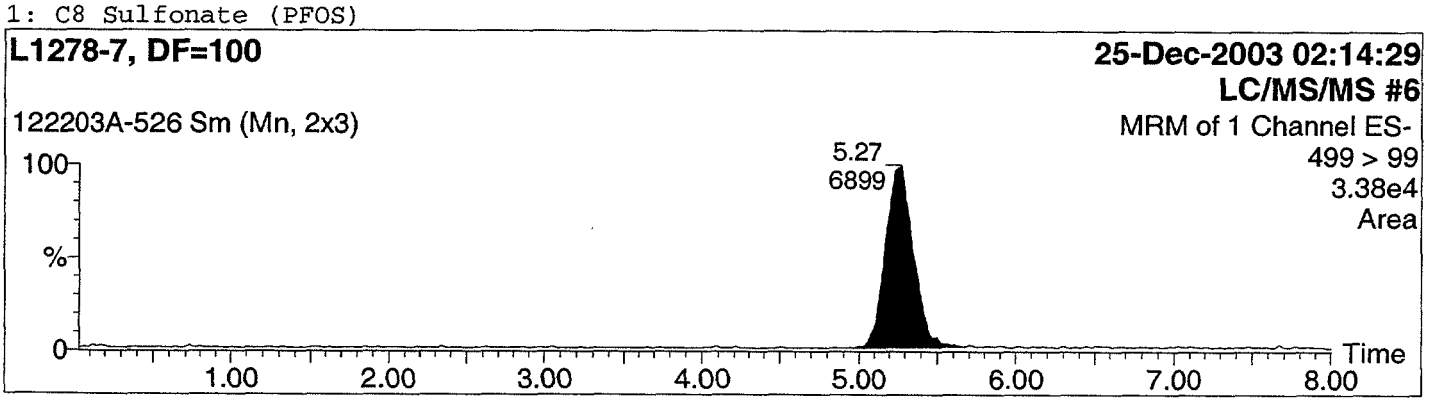


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-526
Text:

1: C8 Sulfonate (PFOS)

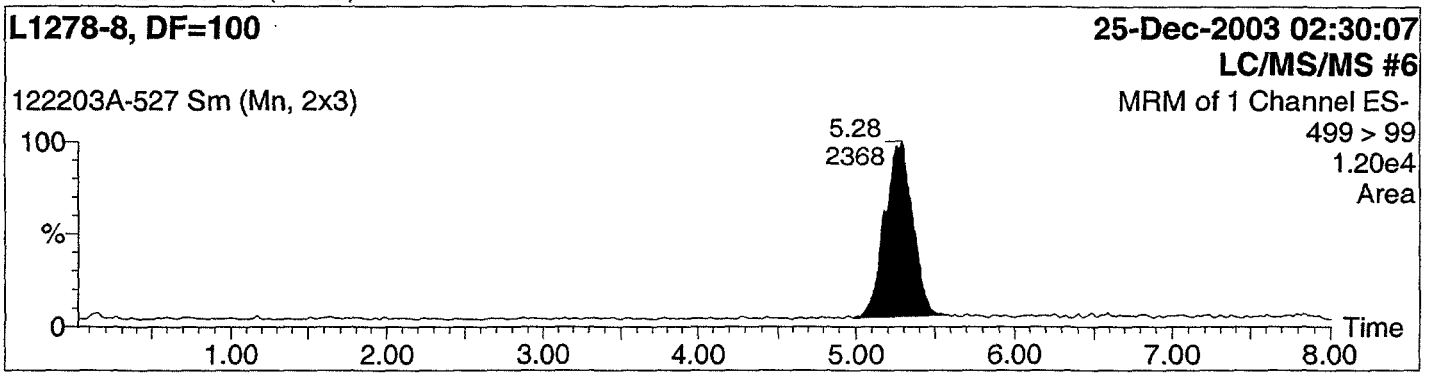


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-527
Text:

1: C8 Sulfonate (PFOS)



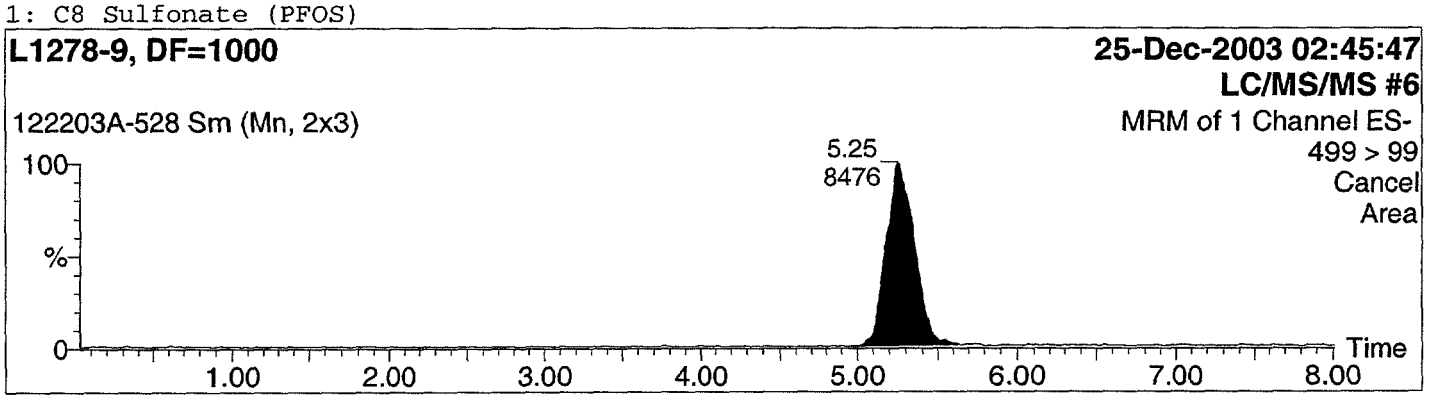
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-528
Text:

1: C8 Sulfonate (PFOS)



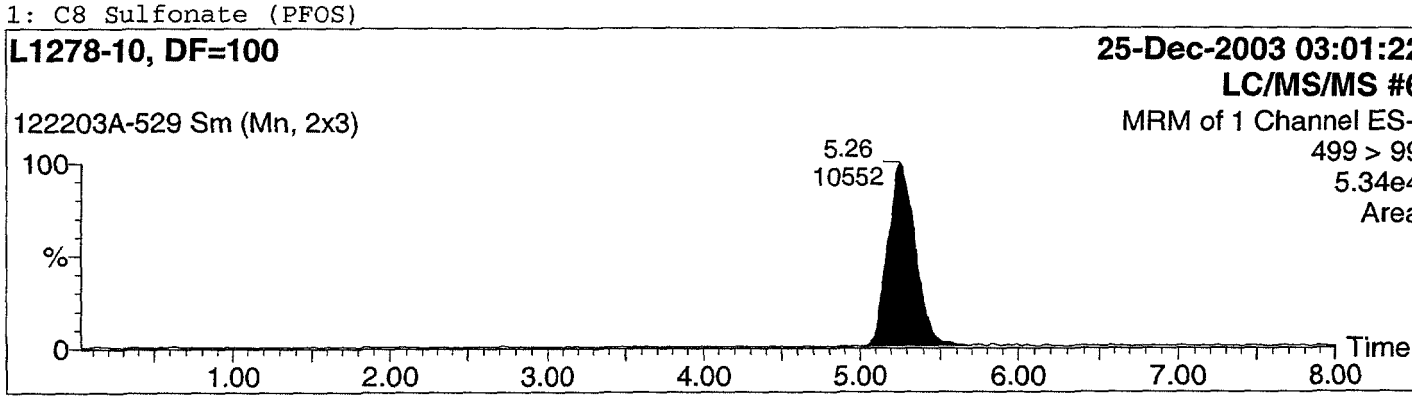
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-529
Text:

1: C8 Sulfonate (PFOS)



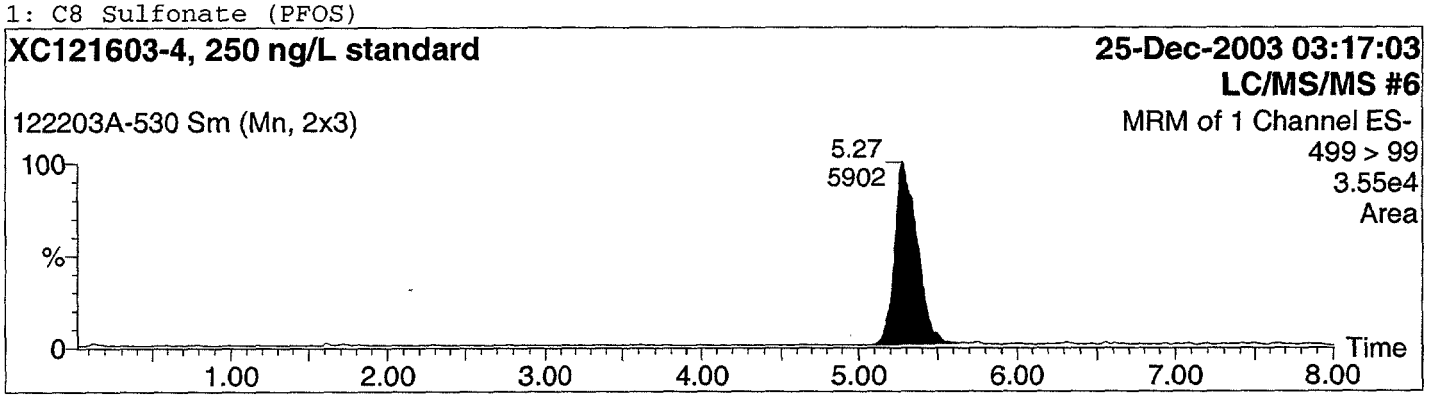
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-530
Text:

1: C8 Sulfonate (PFOS)

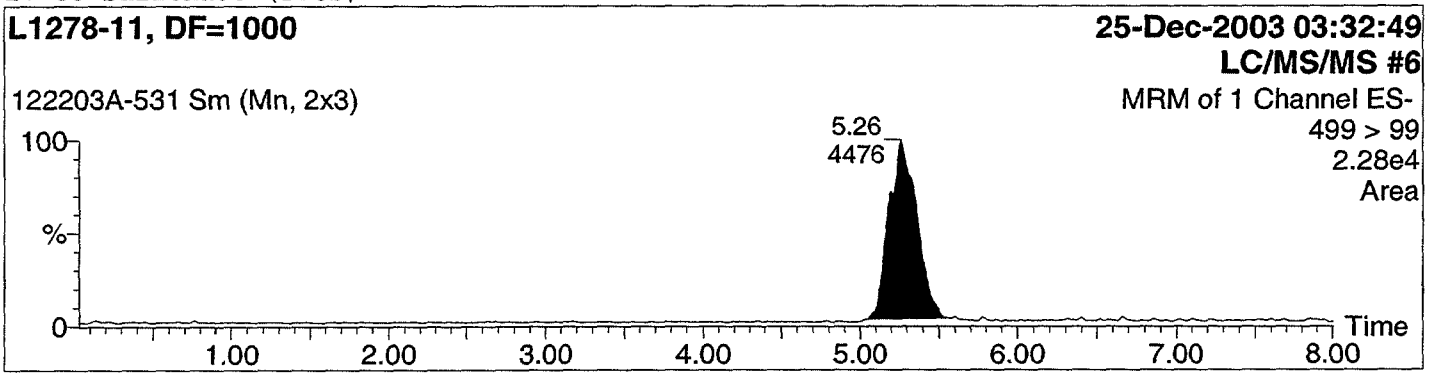


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-531
Text:

1: C8 Sulfonate (PFOS)



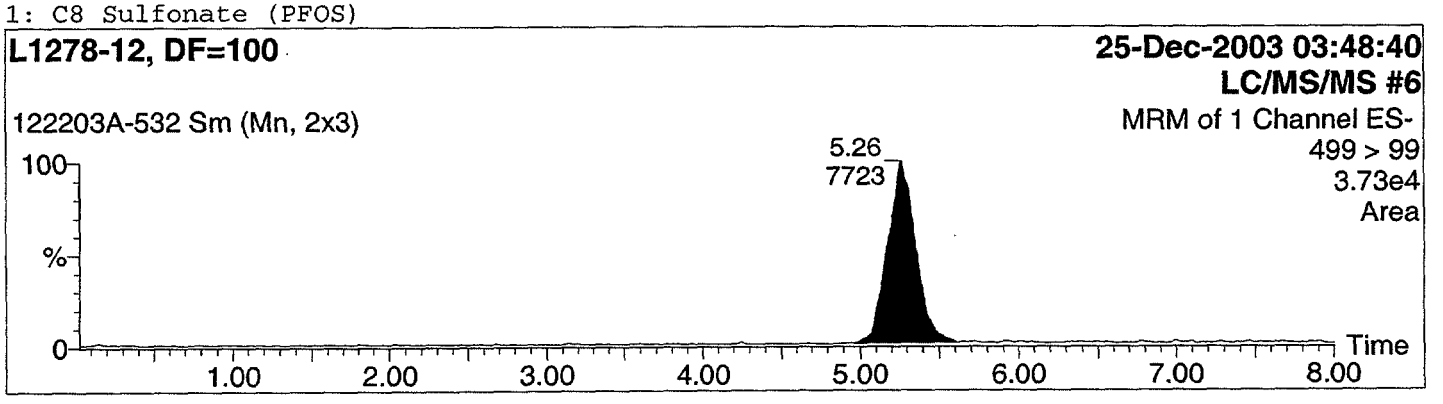
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-532
Text:

1: C8 Sulfonate (PFOS)



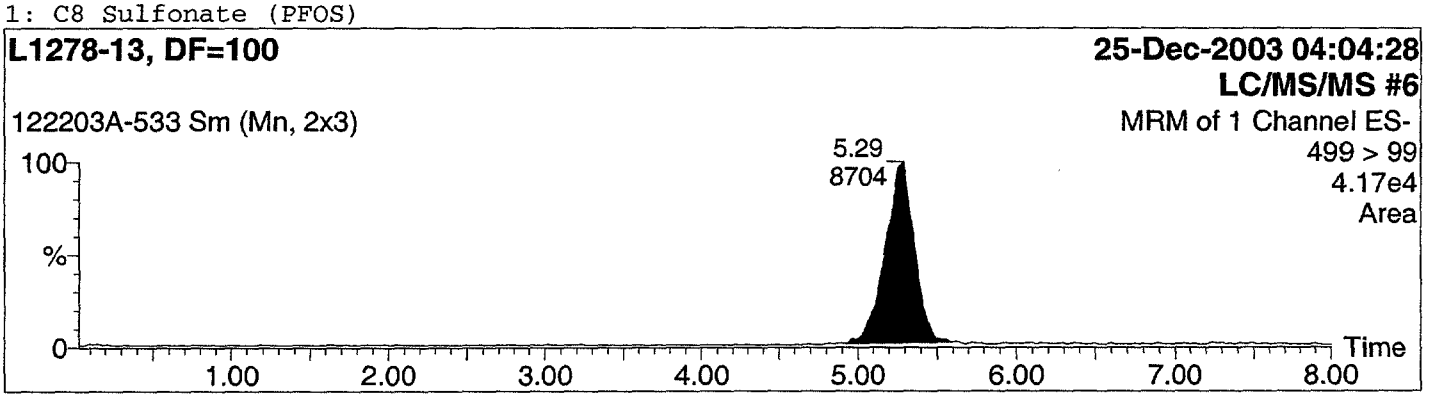
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-533
Text:

1: C8 Sulfonate (PFOS)



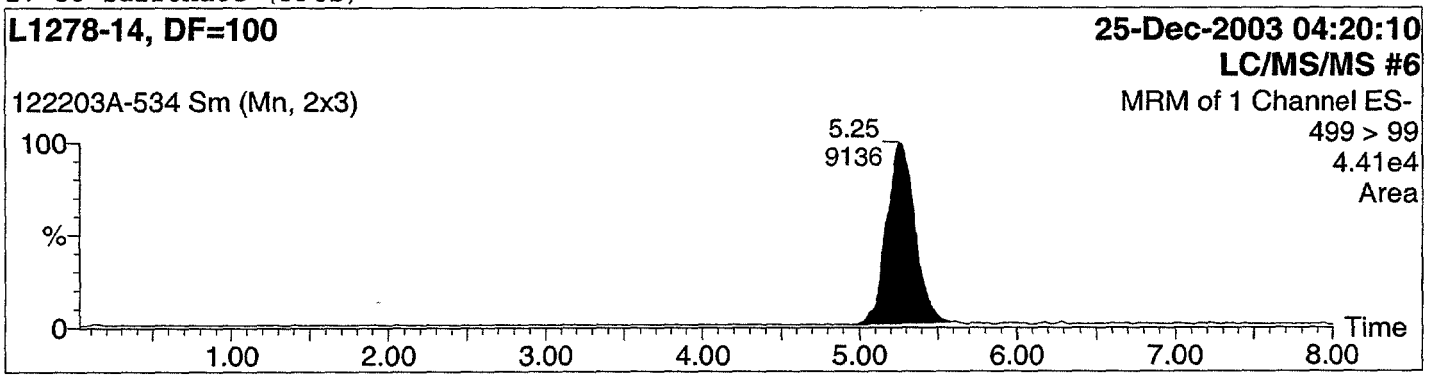
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-534
Text:

1: C8 Sulfonate (PFOS)



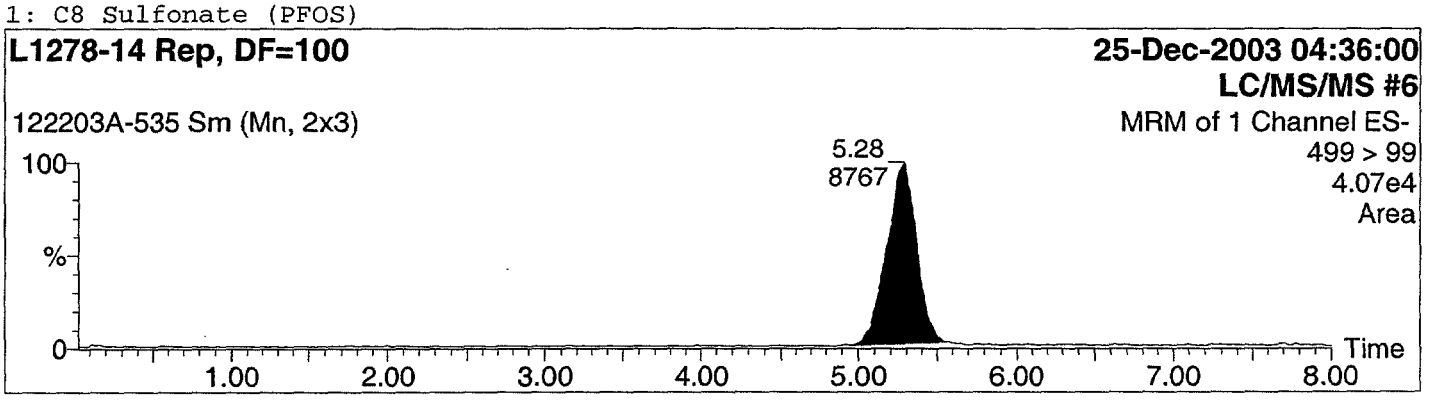
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-535
Text:

1: C8 Sulfonate (PFOS)



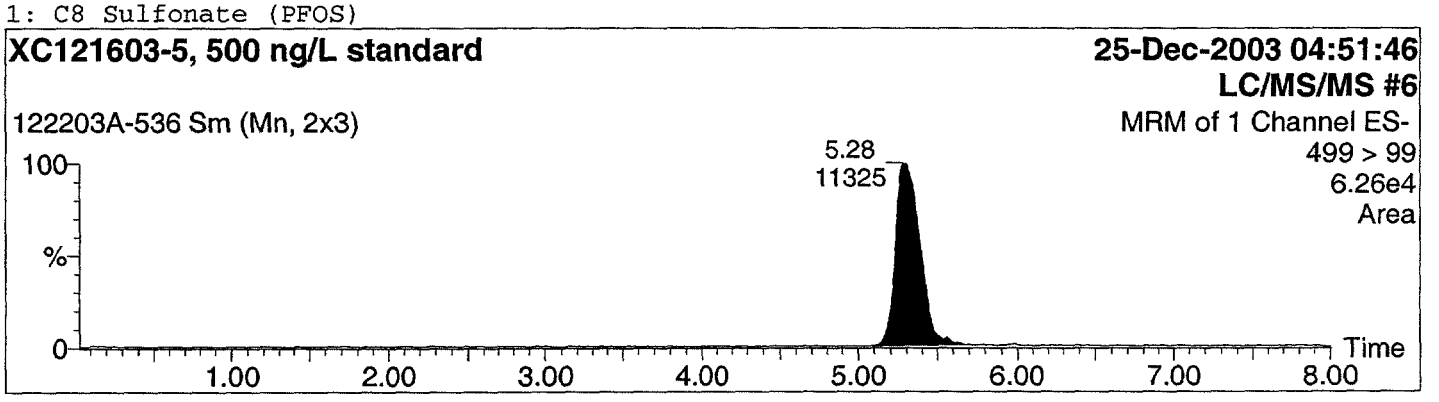
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-536
Text:

1: C8 Sulfonate (PFOS)



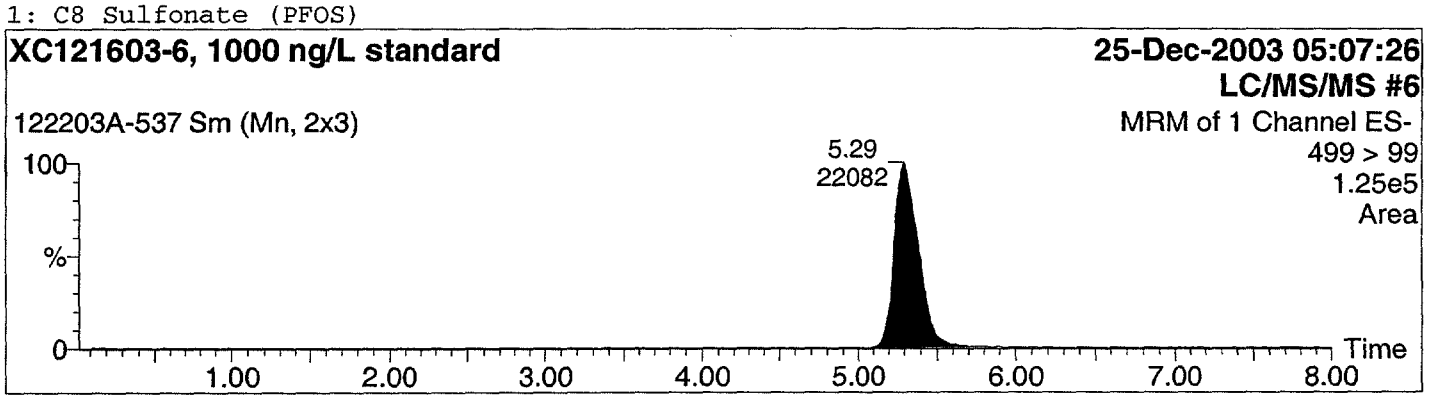
Study No.:L1278, Set No.:122203A, Ext.Date:12/19&22/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\122203A Soil
Last modified: Tue Dec 30 07:56:47 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Tue Dec 30 08:09:48 2003

Name: 122203A-537
Text:

1: C8 Sulfonate (PFOS)



RAW DATA REPORT

Sponsor Study No:	NA	Limit of Quantitation:	50 ppt	Set No:	121903AR
Exygen Study No:	L1278	Injection Volume:	15 µL	Analyst:	Karen Risha
Analyte:	PFOS	Matrix:	Soil	Instrument Type:	LC/MS/MS Unit #6
Ions Monitored:	499 -> 99	Sample Weight:	5.0 g	Extraction Date:	12/19/03
Site:	NA	Final Volume:	5.0 mL	Analyzed on:	12/23/03

Exygen ID	Sponsor ID	Sample Code	Run No.	Std. Conc. (ppt)	Dilution Factor	Peak Area	Analyte Found (ppt)	Amount Added (ppt)	Recovery (%)	Analyte Found (ppb)	Total Solids (%)	Analyte Found (ppb) Dry Weight
XC121603-0	-	C	121903AR-301	0	-	0	-	-	-	-	-	-
XC121603-1	-	CS	121903AR-302	25	-	706	-	-	-	-	-	-
XC121603-2	-	CS	121903AR-303	50	-	1297	-	-	-	-	-	-
XC121603-3	-	CS	121903AR-304	100	-	2453	-	-	-	-	-	-
XC121603-4	-	CS	121903AR-305	250	-	6688	-	-	-	-	-	-
XC121603-5	-	CS	121903AR-306	500	-	14252	-	-	-	-	-	-
XC121603-6	-	CS	121903AR-307	1000	-	26090	-	-	-	-	-	-
L1278-15	MW-4 (0-2)	S	121903AR-308	-	100	9458	36700	-	-	294	88.07	333
L1278-16	MW-4 (3-5)	S	121903AR-309	-	1000	13739	534000	-	-	4270	83.17	5130
L1278-17	MW-4 (8-10)	S	121903AR-310	-	100	9062	35100	-	-	281	80.21	350
L1278-18	MW-4 (13-15)	S	121903AR-311	-	100	3381	13000	-	-	104	80.32	129
L1278-18 Rep	MW-4 (13-15)	S	121903AR-312	-	100	3338	12900	-	-	103	80.32	128
L1278-19	MW-4 (18-20)	S	121903AR-313	-	20	12417	9640	-	-	77.1	77.80	99.1
XC121603-1	-	CS	121903AR-314	25	-	707	-	-	-	-	-	-
XC121603-2	-	CS	121903AR-315	50	-	1188	-	-	-	-	-	-
L1278-20	MW-4 (28-30)	S	121903AR-316	-	10	12685	4930	-	-	39.4	68.10	57.9
L1278-21	MW-3 (4-6)	S	121903AR-317	-	1000	5987	232000	-	-	1860	83.49	2230
L1278-22	MW-3 (9-11)	S	121903AR-318	-	100	4241	16400	-	-	131	84.75	155
L1278-23	MW-3 (14-16)	S	121903AR-319	-	10	12878	5000	-	-	40.0	74.92	53.4
L1278-24	MW-3 (19-21)	S	121903AR-320	-	10	4489	1730	-	-	13.8	81.95	16.9
XC121603-3	-	CS	121903AR-321	100	-	2597	-	-	-	-	-	-
L1278-25	MW-1 (0-2)	S	121903AR-322	-	1000	4725	183000	-	-	1460	85.85	1700
L1278-26	MW-1 (8-10)	S	121903AR-323	-	100	10179	39500	-	-	316	80.12	394
L1278-27	MW-6 (0-2)	S	121903AR-324	-	1000	6036	234000	-	-	1870	94.85	1970
L1278-28	MW-6 (4-6)	S	121903AR-325	-	1000	12816	498000	-	-	3980	82.13	4850
XC121603-4	-	CS	121903AR-326	250	-	6508	-	-	-	-	-	-
L1278-29	MW-6 (9-11)	S	121903AR-327	-	1000	5411	209000	-	-	1670	84.66	1970
L1278-29 Rep	MW-6 (9-11)	S	121903AR-328	-	1000	5439	210000	-	-	1680	84.66	1980
L1278-30	MW-6 (14-16)	S	121903AR-329	-	1000	9444	366000	-	-	2930	84.86	3450
L1278-31	MW-6 (19-21)	S	121903AR-330	-	1000	3750	145000	-	-	1160	80.88	1430
L1278-32	MW-6 (24-26)	S	121903AR-331	-	100	9376	36400	-	-	291	78.28	372
XC121603-5	-	CS	121903AR-332	500	-	12856	-	-	-	-	-	-
XC121603-6	-	CS	121903AR-333	1000	-	23975	-	-	-	-	-	-

Analyte Found (ppt) = (peak area - intercept) / slope x DF

Recovery (%) = [analyte found (ppt)-analyte found in control (ppt)] x 100 / amount added (ppt)

Standard Curve : Linear (1/x weighted)
Intercept = 36.4562
Slope = 25.6834
Coef. Of Det. = 0.994297

Analyte Found (ppb) = [analyte found (ppt) x volume extracted (0.04 L)] / sample weight (5 g)
Analyte Found (ppb) dry weight = analyte found (ppb) x (100% / total solids (%))

CS = Calibration standard
C = Control sample
S = Sample

LF = Lab fortified sample
FF = Field fortified sample
LCS = Laboratory Control Spike

CK = Check Standard
ND = Not detected = Response between 0 and 25 ppt
NQ = Not quantifiable = Response between 25 ppt and LOQ (50 ppt)

Spreadsheet prepared by: KR, 12/24/03

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121903AR Soil.SPL
Printed: Mon Dec 22 13:32:43 2003 12/22/03

Exygen STUDY NO. L1278

Page Position: (1, 1)

	Vial	File Name	LIMS ID	Client ID	Sample Description	Matrix	Sample Type	Conc (ng/L)	Conc B	Conc C	Test ID	DF	MS Method
1	1	121903AR-301	---	---	XC121603-0, 0 ng/L standard	---	Blank	0	---	---	0	1	PFOS
2	2	121903AR-302	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
3	3	121903AR-303	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
4	4	121903AR-304	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
5	5	121903AR-305	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
6	6	121903AR-306	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
7	7	121903AR-307	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS
8	51	121903AR-308	---	---	L1278-15, DF=100	---	Analyte	---	---	---	0	100	PFOS
9	52	121903AR-309	---	---	L1278-16, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
10	53	121903AR-310	---	---	L1278-17, DF=100	---	Analyte	---	---	---	0	100	PFOS
11	54	121903AR-311	---	---	L1278-18, DF=100	---	Analyte	---	---	---	0	100	PFOS
12	55	121903AR-312	---	---	L1278-18 Rep, DF=100	---	Analyte	---	---	---	0	100	PFOS
13	56	121903AR-313	---	---	L1278-19, DF=20	---	Analyte	---	---	---	0	20	PFOS
14	2	121903AR-314	---	---	XC121603-1, 25 ng/L standard	---	Standard	25	---	---	0	1	PFOS
15	3	121903AR-315	---	---	XC121603-2, 50 ng/L standard	---	Standard	50	---	---	0	1	PFOS
16	57	121903AR-316	---	---	L1278-20, DF=10	---	Analyte	---	---	---	0	10	PFOS
17	58	121903AR-317	---	---	L1278-21, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
18	59	121903AR-318	---	---	L1278-22, DF=100	---	Analyte	---	---	---	0	100	PFOS
19	60	121903AR-319	---	---	L1278-23, DF=10	---	Analyte	---	---	---	0	10	PFOS
20	61	121903AR-320	---	---	L1278-24, DF=10	---	Analyte	---	---	---	0	10	PFOS
21	4	121903AR-321	---	---	XC121603-3, 100 ng/L standard	---	Standard	100	---	---	0	1	PFOS
22	62	121903AR-322	---	---	L1278-25, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
23	63	121903AR-323	---	---	L1278-26, DF=100	---	Analyte	---	---	---	0	100	PFOS
24	64	121903AR-324	---	---	L1278-27, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
25	65	121903AR-325	---	---	L1278-28, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
26	5	121903AR-326	---	---	XC121603-4, 250 ng/L standard	---	Standard	250	---	---	0	1	PFOS
27	66	121903AR-327	---	---	L1278-29, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
28	67	121903AR-328	---	---	L1278-29 Rep, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
29	68	121903AR-329	---	---	L1278-30, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
30	69	121903AR-330	---	---	L1278-31, DF=1000	---	Analyte	---	---	---	0	1000	PFOS
31	70	121903AR-331	---	---	L1278-32, DF=100	---	Analyte	---	---	---	0	100	PFOS
32	6	121903AR-332	---	---	XC121603-5, 500 ng/L standard	---	Standard	500	---	---	0	1	PFOS
33	7	121903AR-333	---	---	XC121603-6, 1000 ng/L standard	---	Standard	1000	---	---	0	1	PFOS

Sample List: C:\MASSLYNX\Fluorochemicals.PRO\SampleDB\121903AR Soil.SPL
Printed: Mon Dec 22 13:32:43 2003 KG 12/22/03

Exygen STUDY NO. L1278

Page Position: (2, 1)

	HPLC Method	MS Tune File	Inj.Volume
1	PFOSand PFOA	Fluorochems	15
2	PFOSand PFOA	Fluorochems	15
3	PFOSand PFOA	Fluorochems	15
4	PFOSand PFOA	Fluorochems	15
5	PFOSand PFOA	Fluorochems	15
6	PFOSand PFOA	Fluorochems	15
7	PFOSand PFOA	Fluorochems	15
8	PFOSand PFOA	Fluorochems	15
9	PFOSand PFOA	Fluorochems	15
10	PFOSand PFOA	Fluorochems	15
11	PFOSand PFOA	Fluorochems	15
12	PFOSand PFOA	Fluorochems	15
13	PFOSand PFOA	Fluorochems	15
14	PFOSand PFOA	Fluorochems	15
15	PFOSand PFOA	Fluorochems	15
16	PFOSand PFOA	Fluorochems	15
17	PFOSand PFOA	Fluorochems	15
18	PFOSand PFOA	Fluorochems	15
19	PFOSand PFOA	Fluorochems	15
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27	PFOSand PFOA	Fluorochems	15
28	PFOSand PFOA	Fluorochems	15
29	PFOSand PFOA	Fluorochems	15
30	PFOSand PFOA	Fluorochems	15
31	PFOSand PFOA	Fluorochems	15
32	PFOSand PFOA	Fluorochems	15
33	PFOSand PFOA	Fluorochems	15

LC/MS/MS SYSTEM AND OPERATING CONDITIONS

Sponsor Protocol No: NA | Exygen Study No: L1278

Instrument:	Micromass Quattro Ultima (LC/MS/MS Unit #6)
Computer:	COMPAQ Professional Workstation AP200
Software:	Microsoft Windows NT: Version 4 Build 1381: Service Pack 5 Micromass Limited: MassLynx 3.4 Build 004
HPLC Equipment:	Hewlett Packard (HP) Series 1100 HP Bin Pump — HP Vacuum Degasser HP Autosampler — HP Column Oven
HPLC Column:	Genesis C-8, 5 cm x 2.1 mm i.d. x 4 μ (Exygen ID: 74A) (JONESCHROMATOGRAPHY: Part No. FK5962E)
Mobile Phase (A) :	2 mM Ammonium Acetate in Type I Water
Mobile Phase (B) :	Methanol
Analyst:	Karen Risha Exygen Research 3058 Research Drive, State College, PA 16801 Phone: (814) 272-1039 FAX: (814) 231-1580

KR 12/22/03

NOTE: The next 3 pages are computer generated printouts from the masslynx software program. The pages contain the instrument settings used for the analysis of this data set.

All Handwritten Peak ID's by: KR 12/24/03

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\PFOS
Last Modified: Thu Dec 18 14:43:11 2003

Printed: Mon Dec 22 13:32:50 2003 KJ 12/22/03

Solvent Delay (mins) : 0.00

Analog Channel 4 : Unused
Function : 1 MRM of 1 Mass Pair (ESP-)

Inter Channel Delay (Secs) : 0.03
Span (Daltons) : 0.00
Start Time (Mins) : 0.00
End Time (Mins) : 8.00
Repeats : 1

Channel	Parent	Daughter	Dwell (Secs)	Coll Energy (eV)	Cone (V)
1	499.00	99.00	0.20	40	30

Method File: c:\masslynx\fluorochemicals.pro\acqudb\pfosand pfoa
Last Modified: Monday, December 22, 2003 13:23:46

Printed: Monday, December 22, 2003 13:32:58 KJ 12/22/03

HP1100 LC Pump Initial Conditions

Solvents	
A%	60.0
B%	40.0
C%	0.0
D%	0.0
Flow (ml/min)	0.300
Stop Time (mins)	14.0
Min Pressure (bar)	0
Max Pressure (bar)	400
Oven Temperature Left(°C)	35.0
Oven Temperature Right(°C)	35.0

HP1100 LC Pump Gradient Timetable

The gradient Timetable contains 9 entries which are :

Time	A%	B%	C%	D%	Flow	Pressure
0.00	60.0	40.0	0.0	0.0	0.300	400
0.40	60.0	40.0	0.0	0.0	0.300	400
1.00	10.0	90.0	0.0	0.0	0.300	400
7.00	10.0	90.0	0.0	0.0	0.300	400
7.50	0.0	100.0	0.0	0.0	0.300	400
9.00	0.0	100.0	0.0	0.0	0.400	400
9.50	60.0	40.0	0.0	0.0	0.400	400
13.50	60.0	40.0	0.0	0.0	0.400	400
14.00	60.0	40.0	0.0	0.0	0.300	400

HP1100 LC Pump External Event Timetable

The Timetable contains 6 entries which are :

Time	Column Switch	Contact1	Contact2	Contact3	Contact4
Initial	Off	Off	Off	Off	Off
0.00	Off	On	Off	Off	Off
0.05	Off	Off	Off	Off	Off
0.10	Off	Off	On	Off	Off
7.95	Off	Off	Off	On	Off
8.00	Off	Off	Off	Off	Off

HP1100 Autosampler Initial Conditions

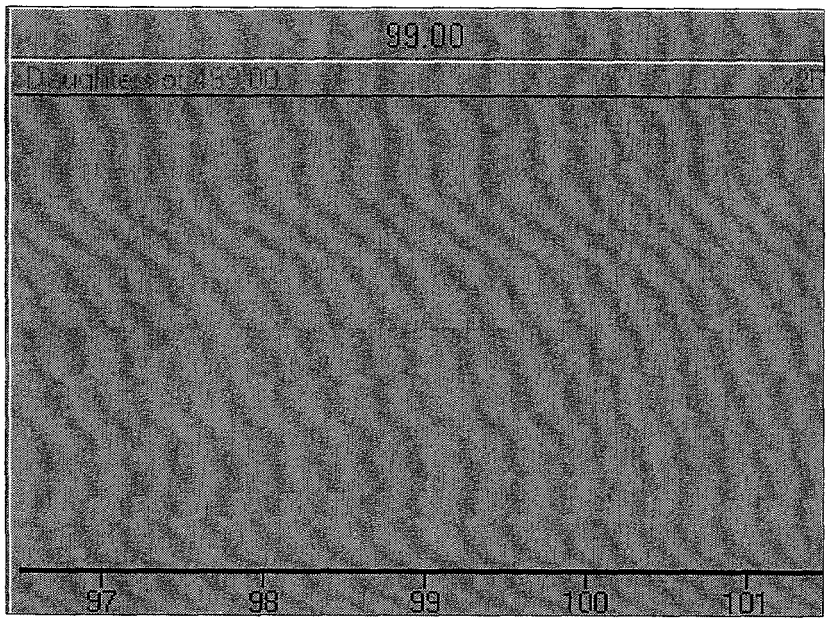
Draw Speed	200.0
Eject Speed (µl/min)	200
Draw Position (mm)	0.50
Stop Time (mins)	14.00
Injection Volume(µl)	15.0
Vial Number	7

Tuning Method Report

Method: C:\MASSLYNX\FLUOROCHEMICALS.PRO\ACQUDB\FLUOROCHEMS

Printed: Mon Dec 22 13:33:17 2003

kf 12/22/03



Dau 499.00

SOURCE (ESP-)	**Set**	**Rdbk**	**Analyser**	**Set**	**Rdbk**
Capillary	3.00	-2.93	LM Res 1	14.0	
Cone	20	-46	HM Res 1	14.0	
Hexapole 1	0.0		IEnergy 1	1.0	
Aperture 1	0.0		Entrance	-2	26
Hexapole 2	0.0		Collision	15	33
Source Block Temp.	100	100	Exit	2	30
Desolvation Temp.	300	299	LM Res 2	14.0	
			HM Res 2	14.0	
			IEnergy 2	2.0	
			Multiplier	650	-648

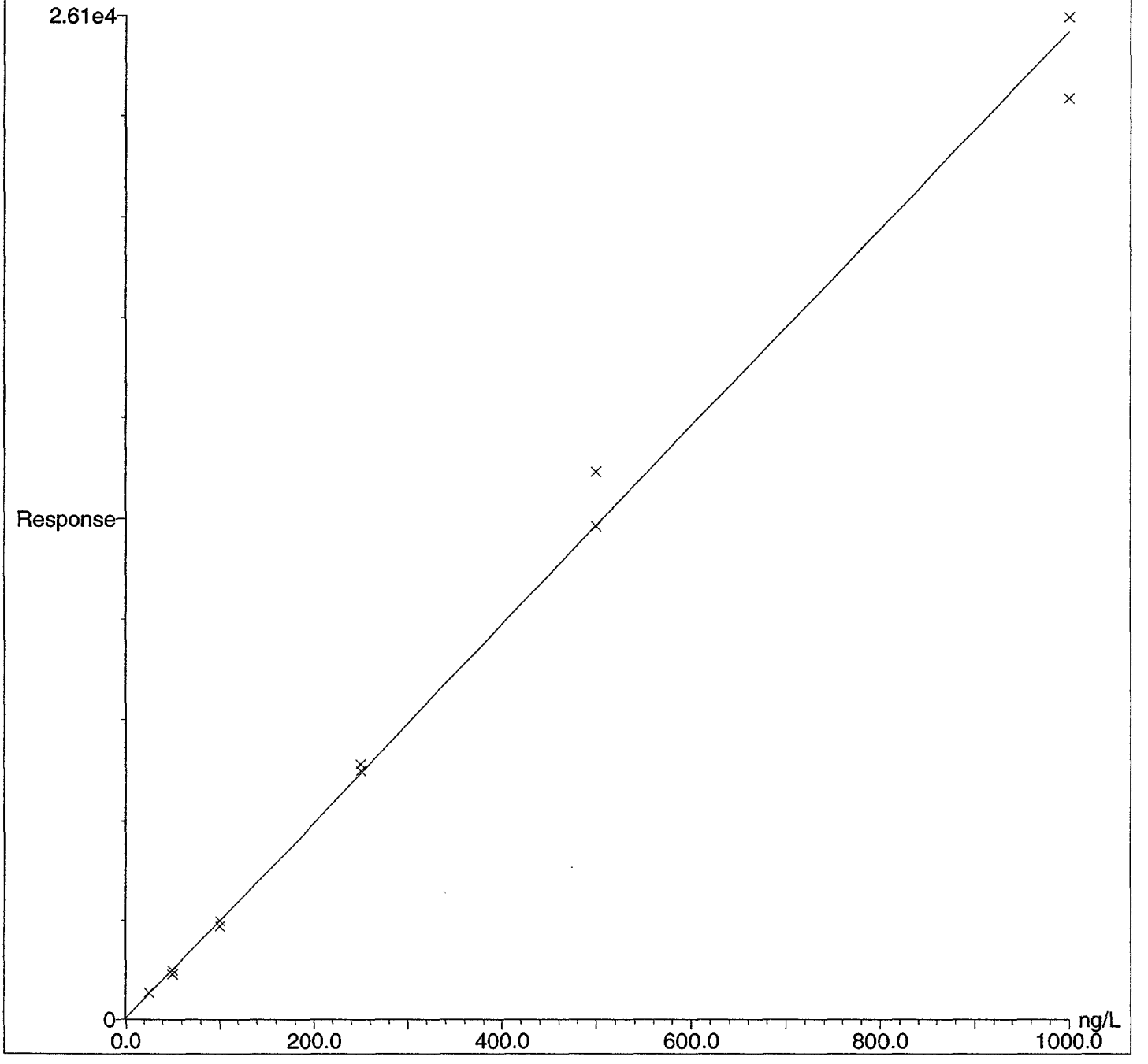
Pressures	**Rdbk**	**Gas Flows**	**Rdbk**
Analyser Vacuum	OFF	Cone Gas	131.0
Gas Cell	3.0e-3	Desolvation	752.7

Quantify Calibration Report
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Calibration: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\CurveDB\121903AR
Last modified: Wed Dec 24 07:37:47 2003
Printed: Wed Dec 24 08:37:57 2003

KR 12/24/03

Compound 1 name: C8 Sulfonate (PFOS)
Coefficient of Determination: 0.994297
Calibration curve: 25.6834 * x + 36.4562
Response type: External Std, Area
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

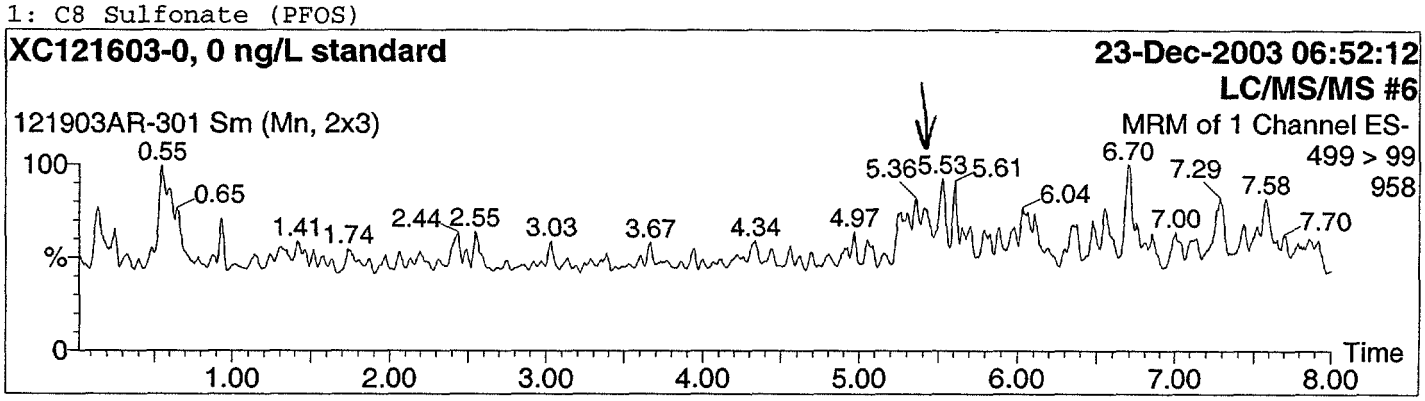
Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Initials
Date 12/24/03
Run# 121903AR-301 To 121903AR-333

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-301
Text:

1: C8 Sulfonate (PFOS)



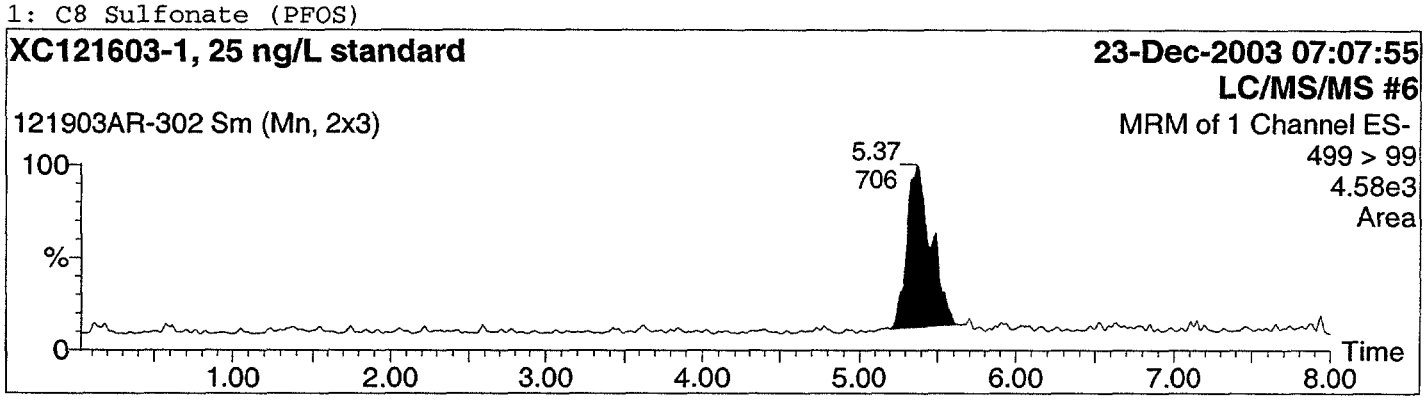
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-302
Text:

1: C8 Sulfonate (PFOS)



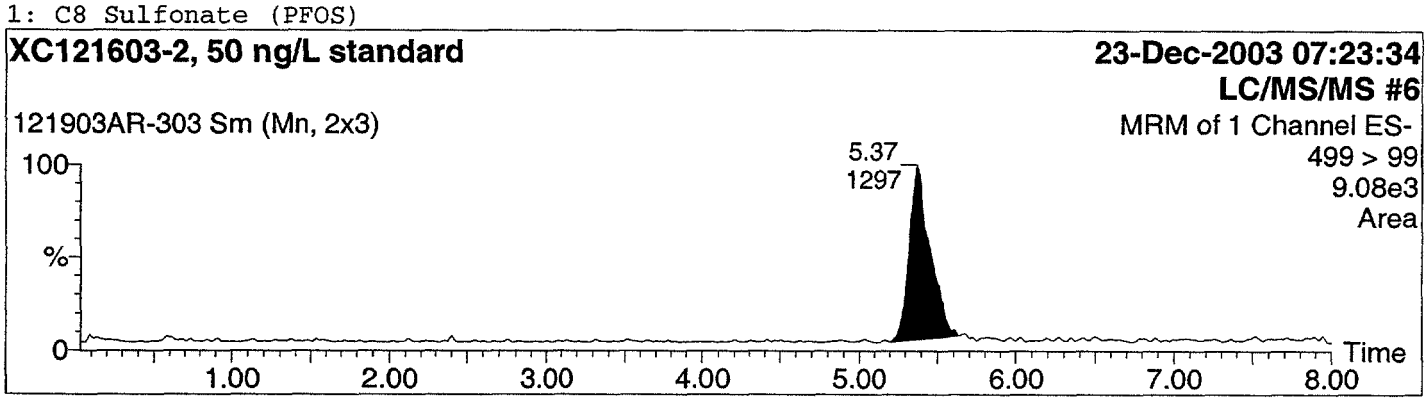
Quantify Sample Report
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-303
Text:

1: C8 Sulfonate (PFOS)



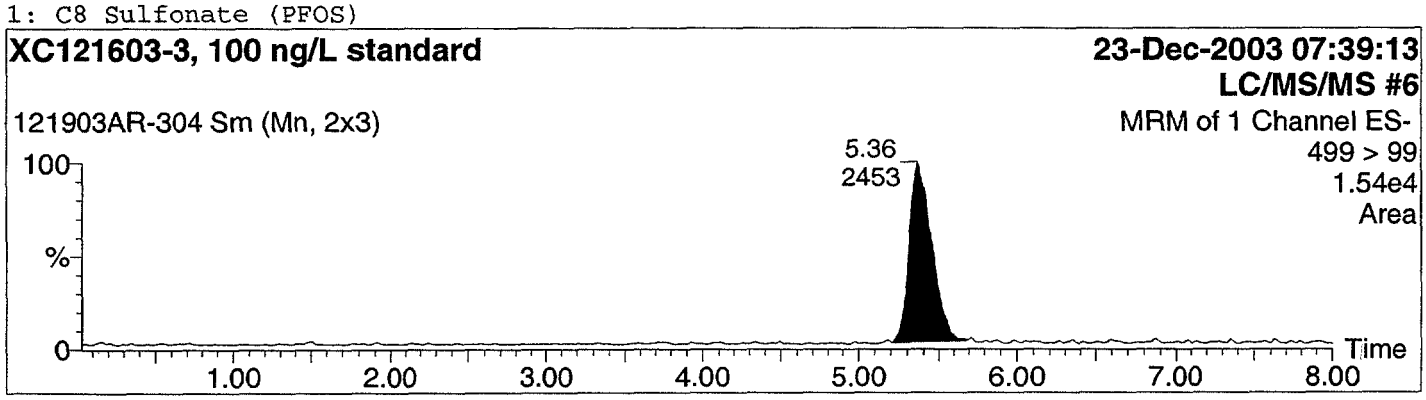
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-304
Text:

1: C8 Sulfonate (PFOS)



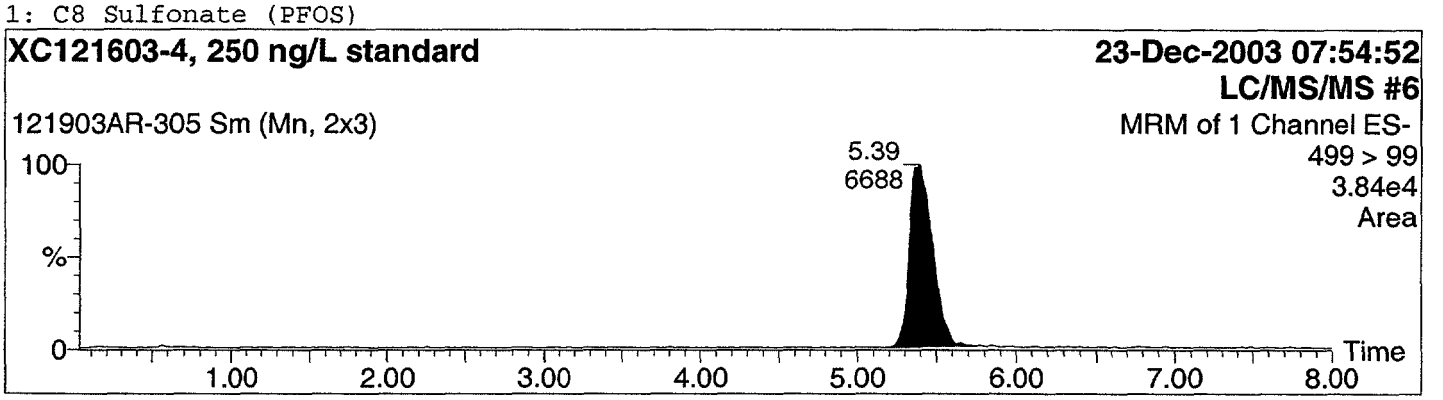
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-305
Text:

1: C8 Sulfonate (PFOS)



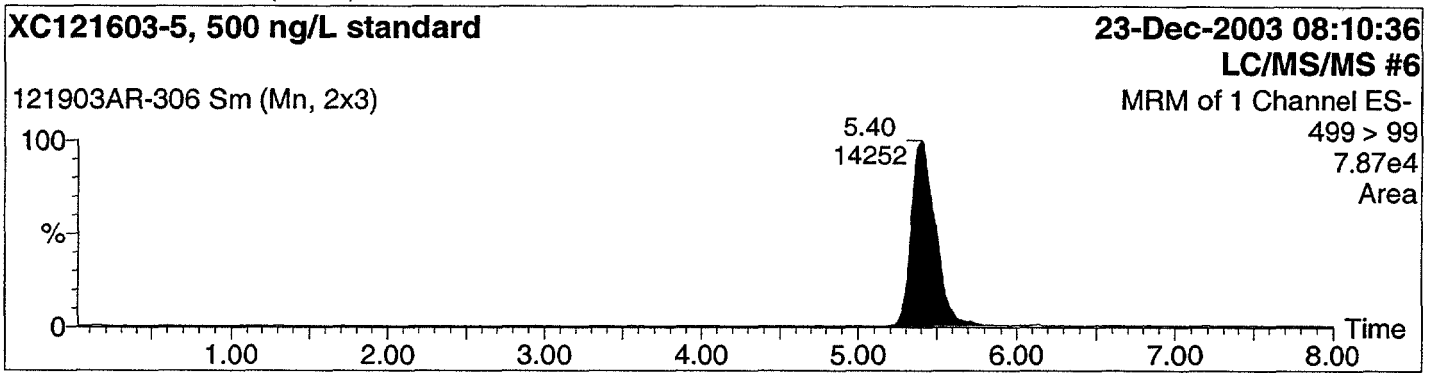
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-306
Text:

1: C8 Sulfonate (PFOS)



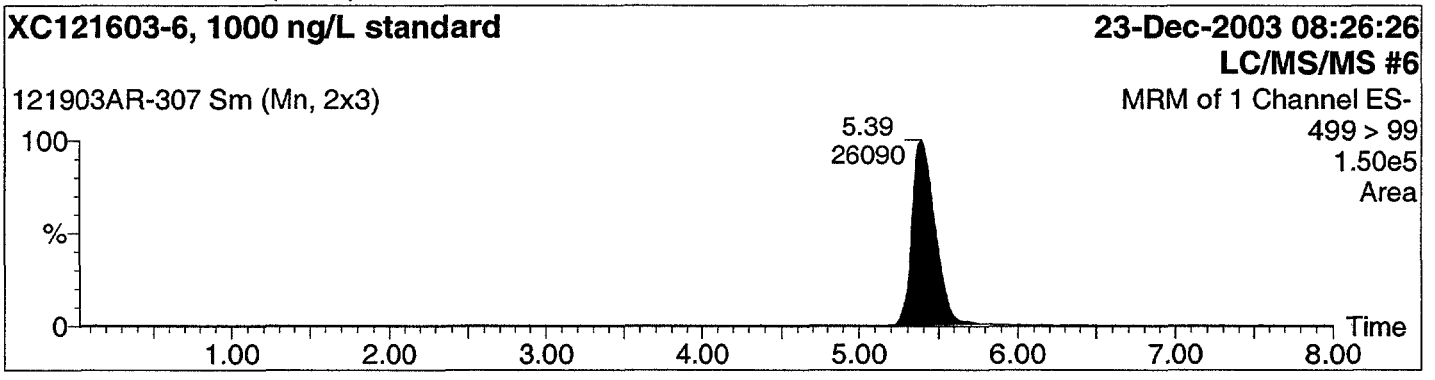
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-307
Text:

1: C8 Sulfonate (PFOS)



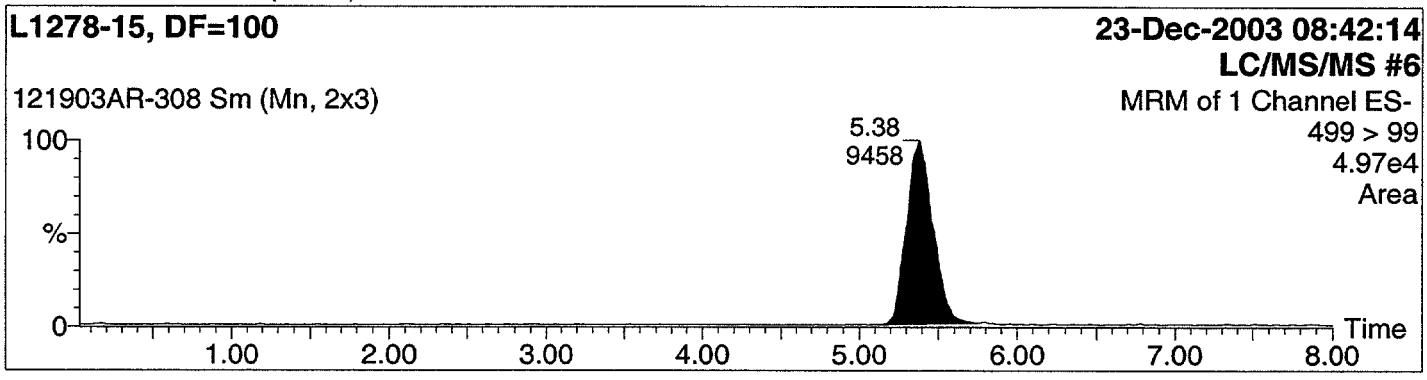
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-308
Text:

1: C8 Sulfonate (PFOS)

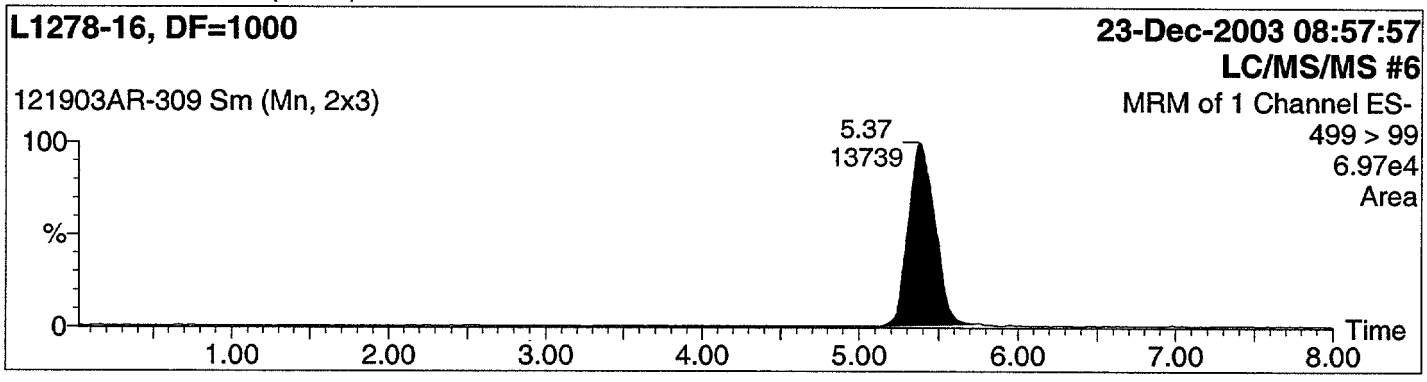


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-309
Text:

1: C8 Sulfonate (PFOS)

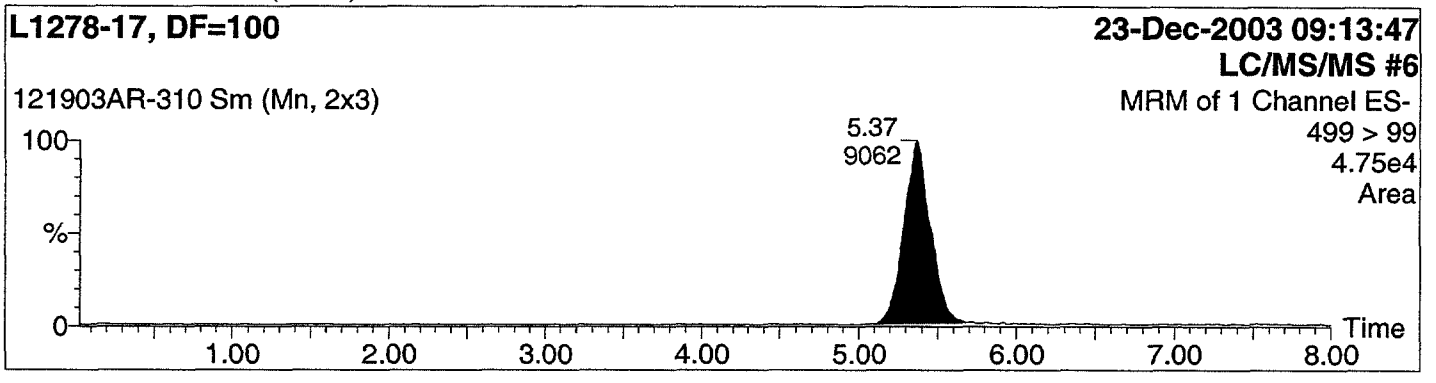


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-310
Text:

1: C8 Sulfonate (PFOS)



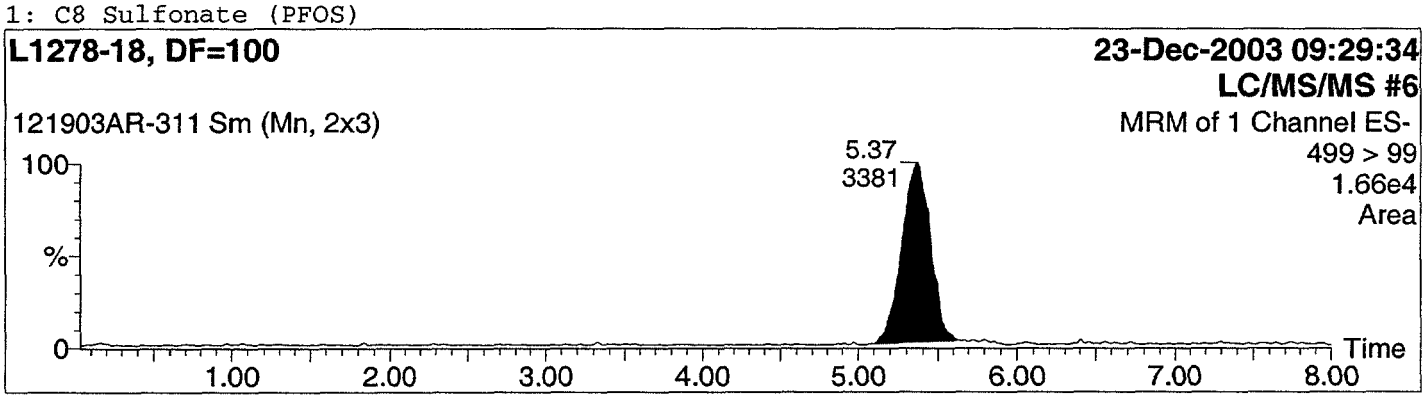
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-311
Text:

1: C8 Sulfonate (PFOS)



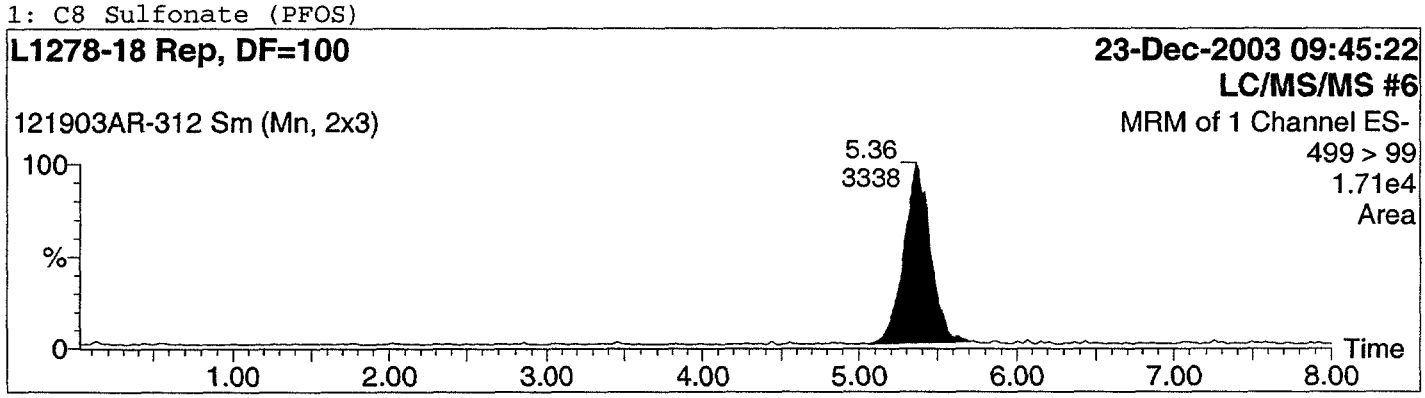
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-312
Text:

1: C8 Sulfonate (PFOS)



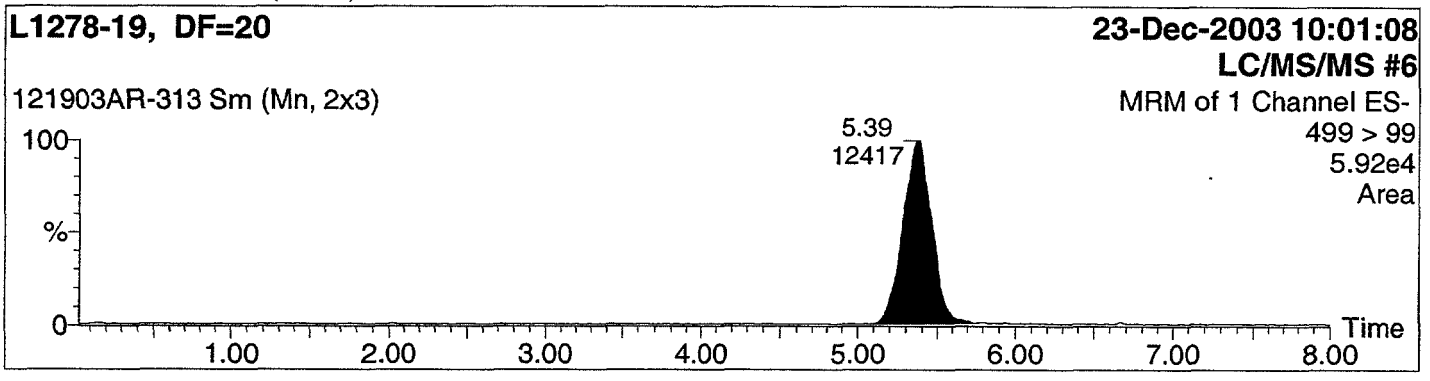
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-313
Text:

1: C8 Sulfonate (PFOS)



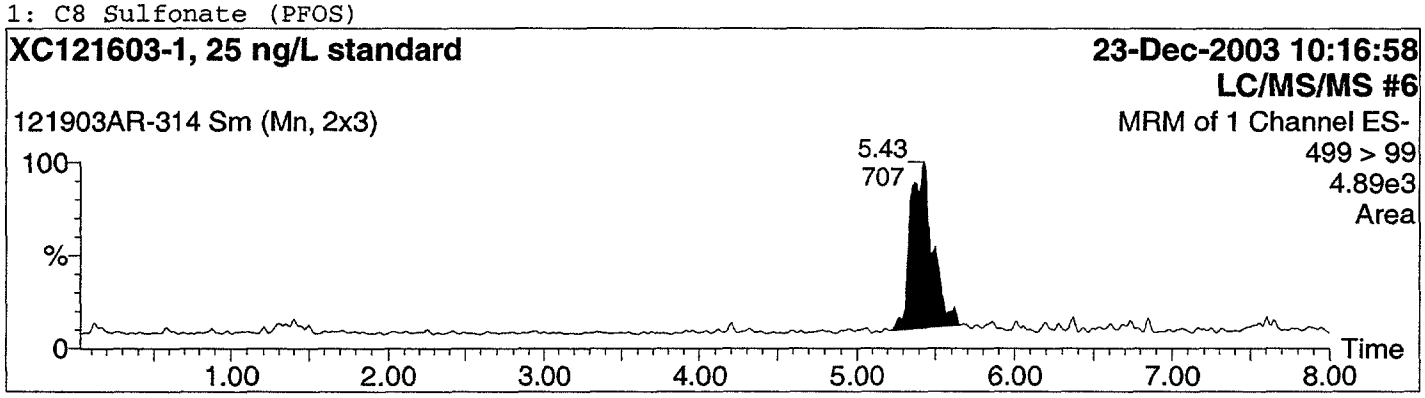
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-314
Text:

1: C8 Sulfonate (PFOS)



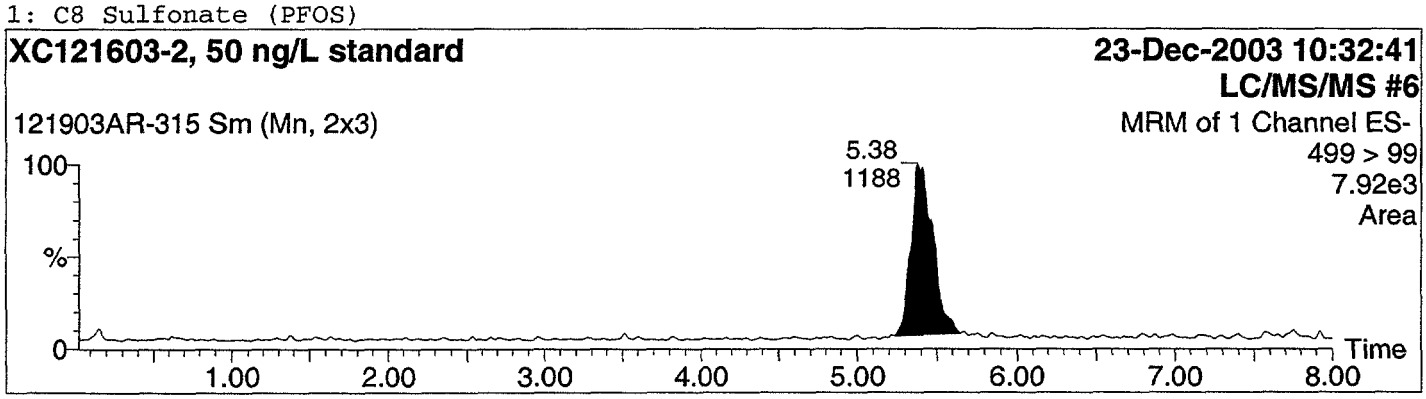
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-315
Text:

1: C8 Sulfonate (PFOS)

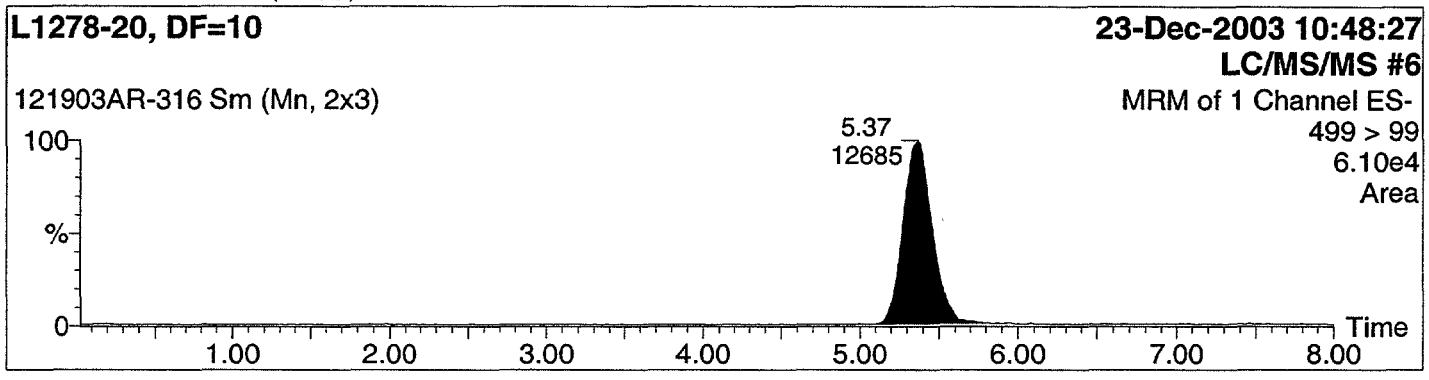


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-316
Text:

1: C8 Sulfonate (PFOS)

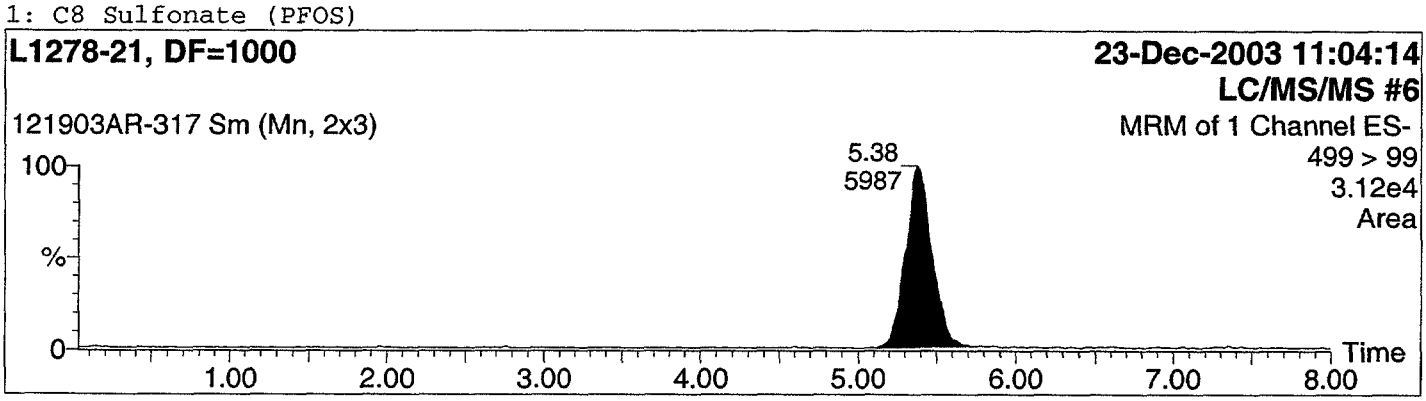


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-317
Text:

1: C8 Sulfonate (PFOS)



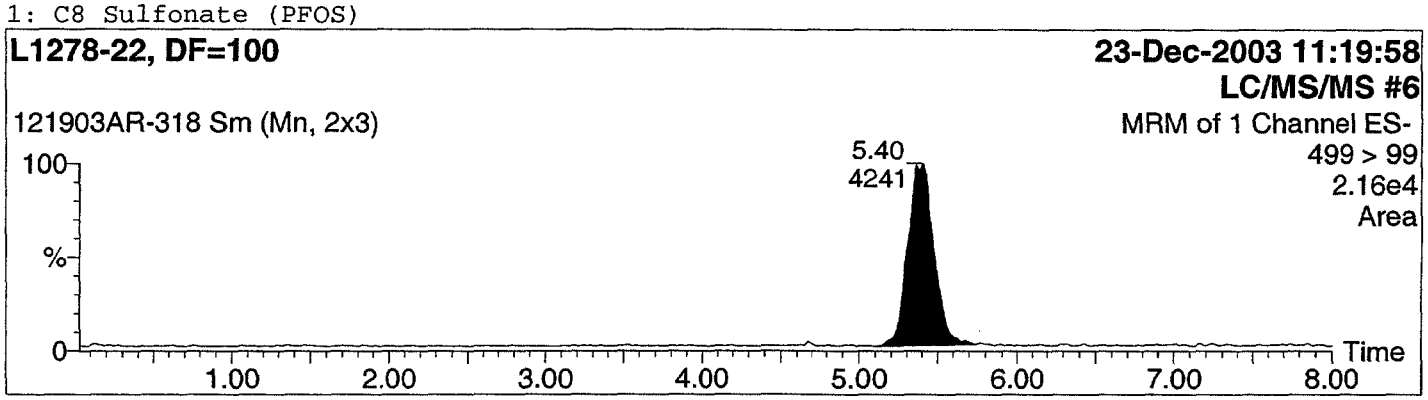
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-318
Text:

1: C8 Sulfonate (PFOS)

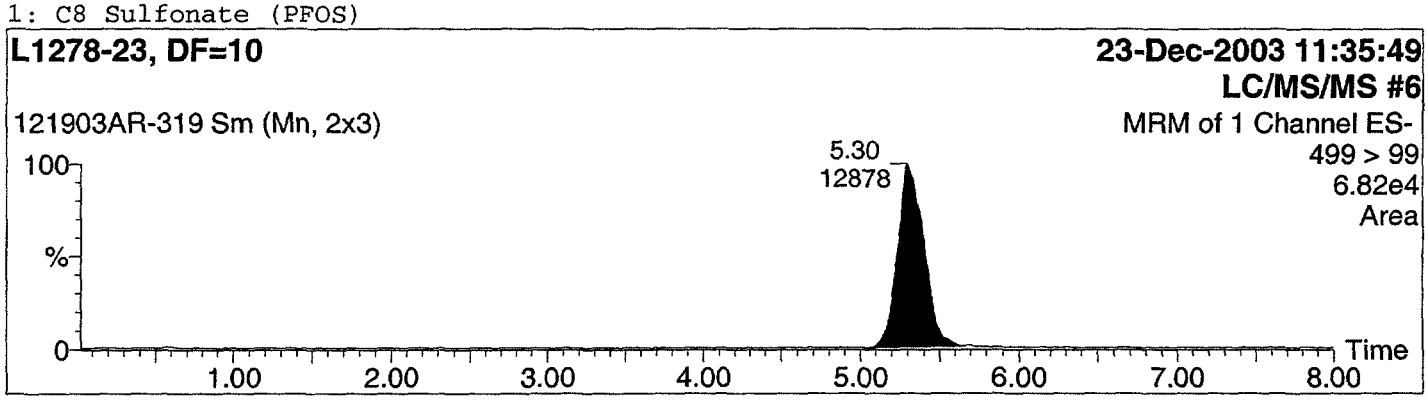


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-319
Text:

1: C8 Sulfonate (PFOS)

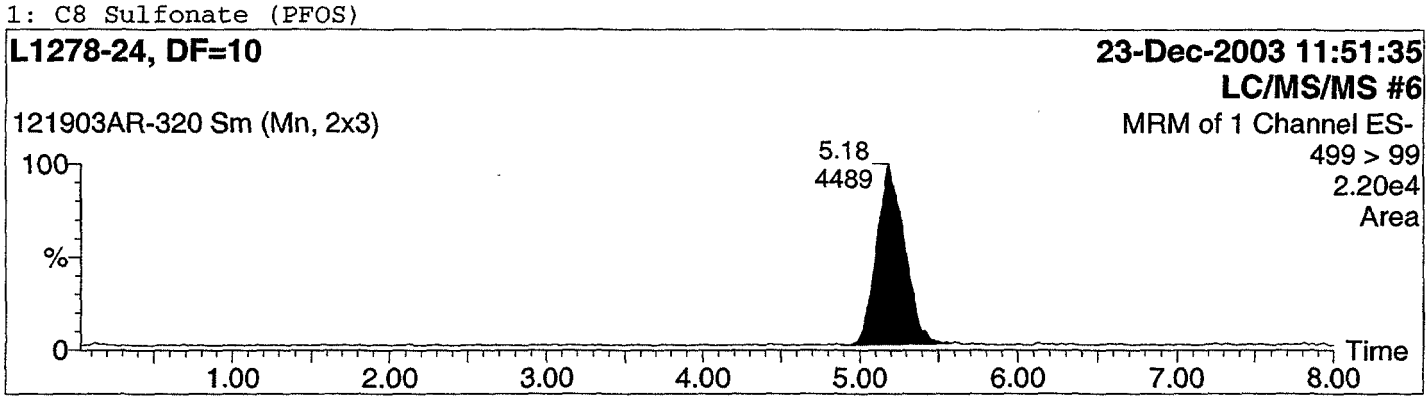


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-320
Text:

1: C8 Sulfonate (PFOS)



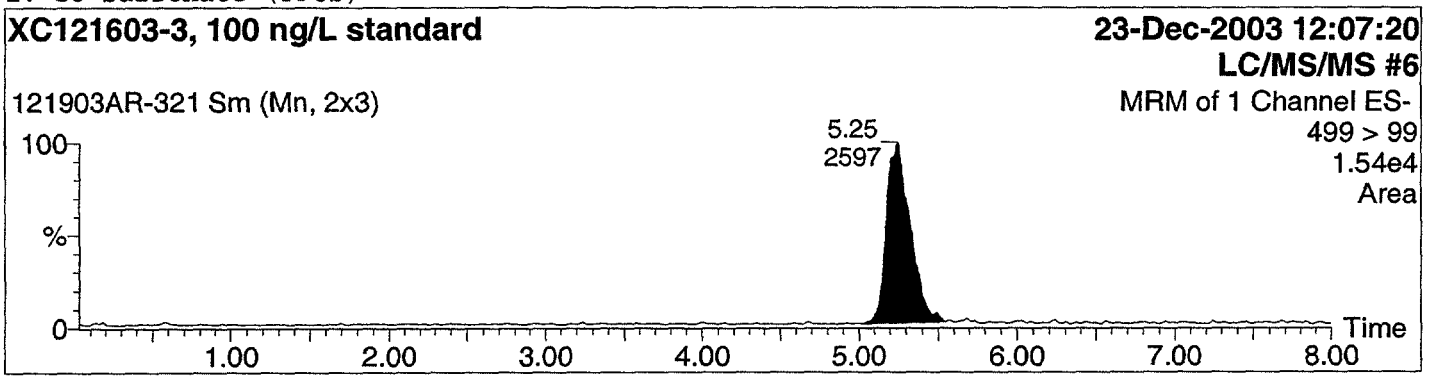
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-321
Text:

1: C8 Sulfonate (PFOS)

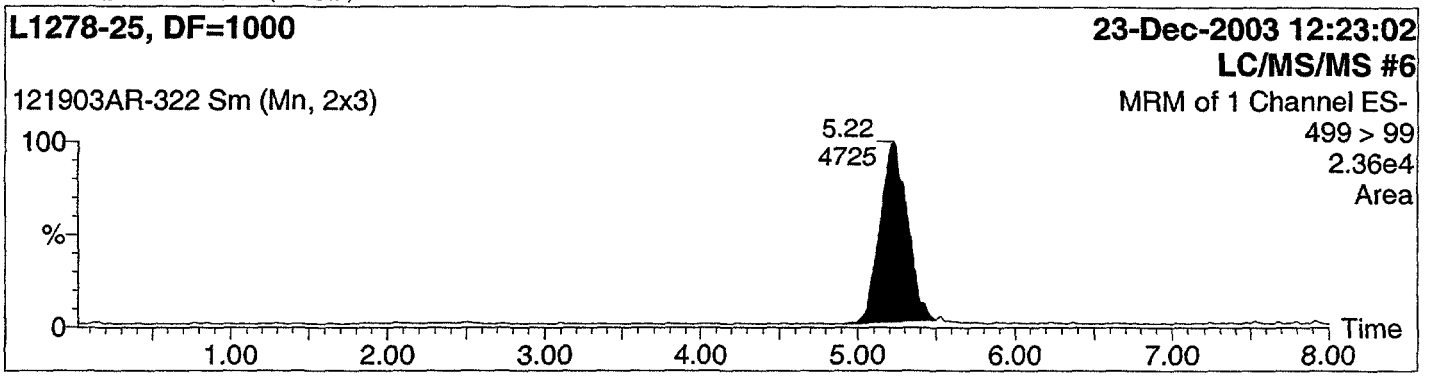


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-322
Text:

1: C8 Sulfonate (PFOS)



Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
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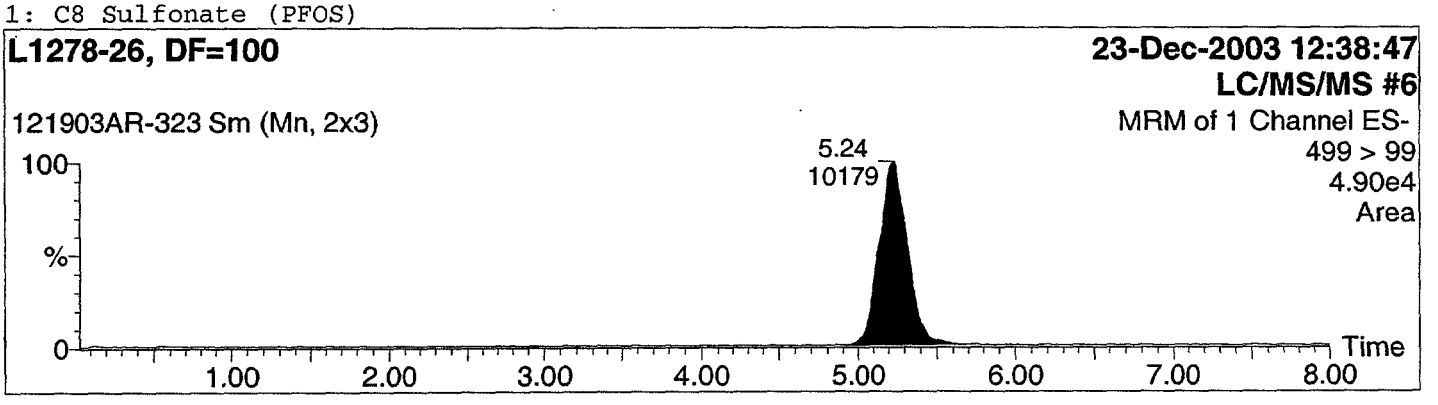
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-323
Text:

1: C8 Sulfonate (PFOS)

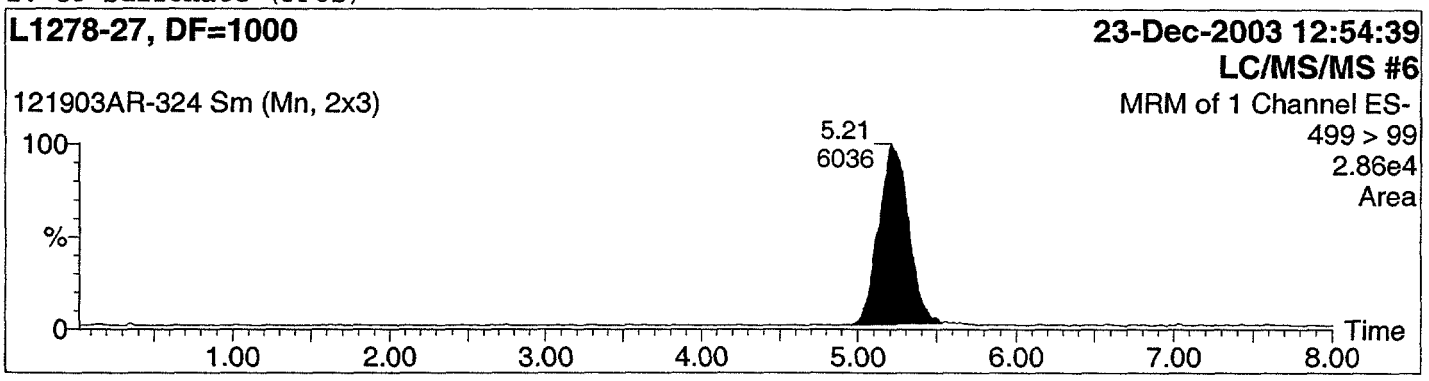


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-324
Text:

1: C8 Sulfonate (PFOS)

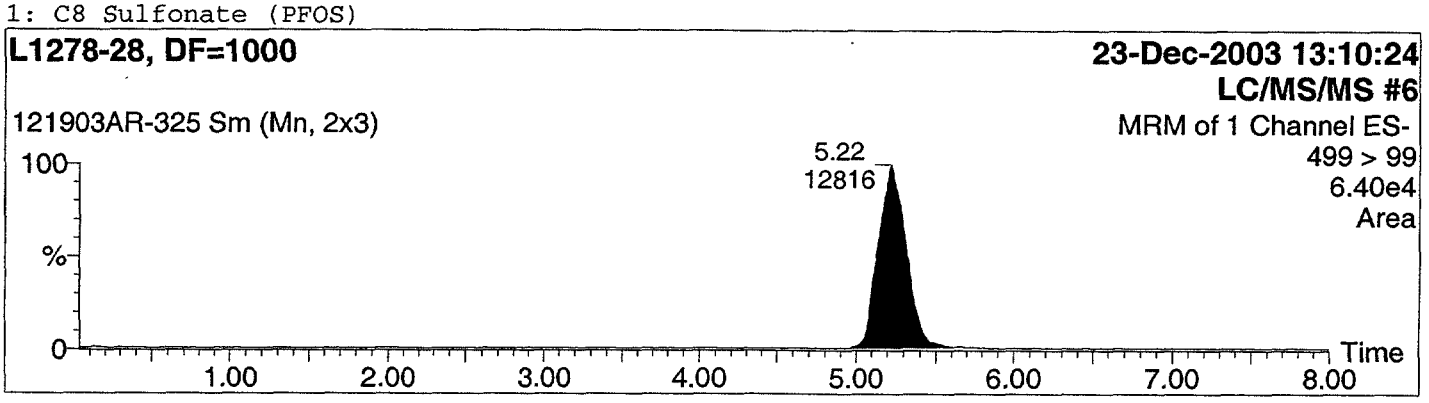


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-325
Text:

1: C8 Sulfonate (PFOS)



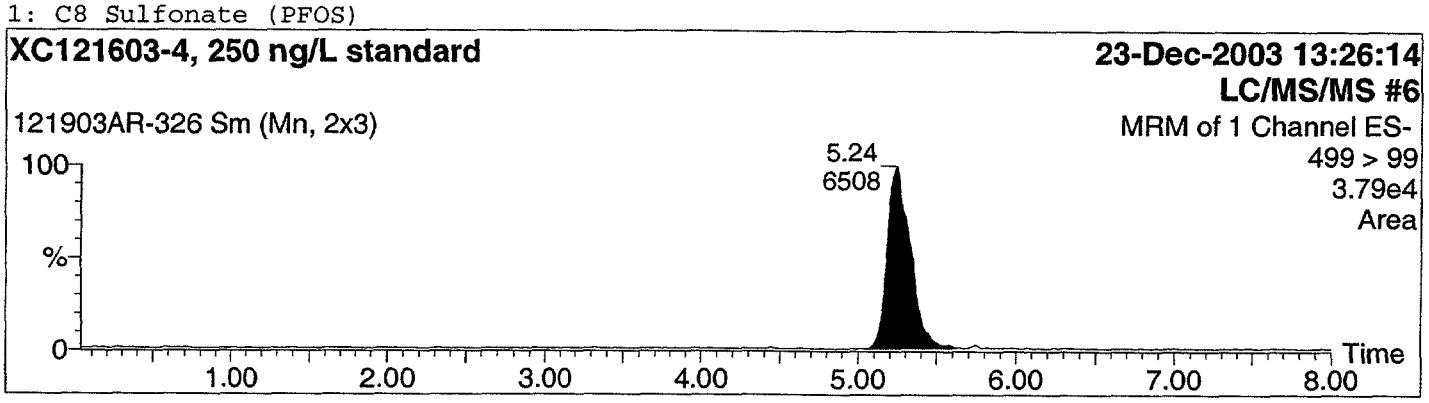
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-326
Text:

1: C8 Sulfonate (PFOS)



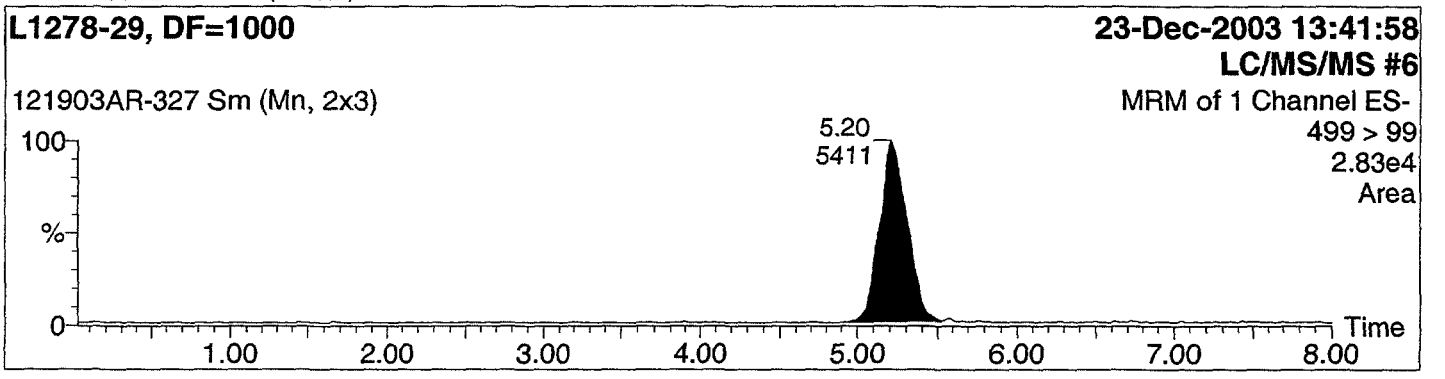
Study No.:L1278, Set No.:121903AR, Ext.Date:12/19/03, Analyst:K.Risha

Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-327
Text:

1: C8 Sulfonate (PFOS)

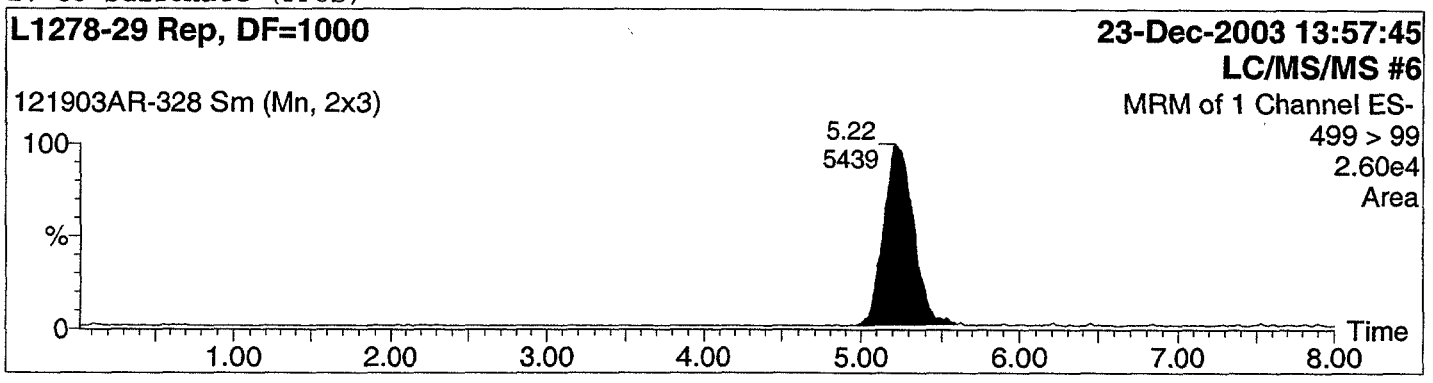


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-328
Text:

1: C8 Sulfonate (PFOS)

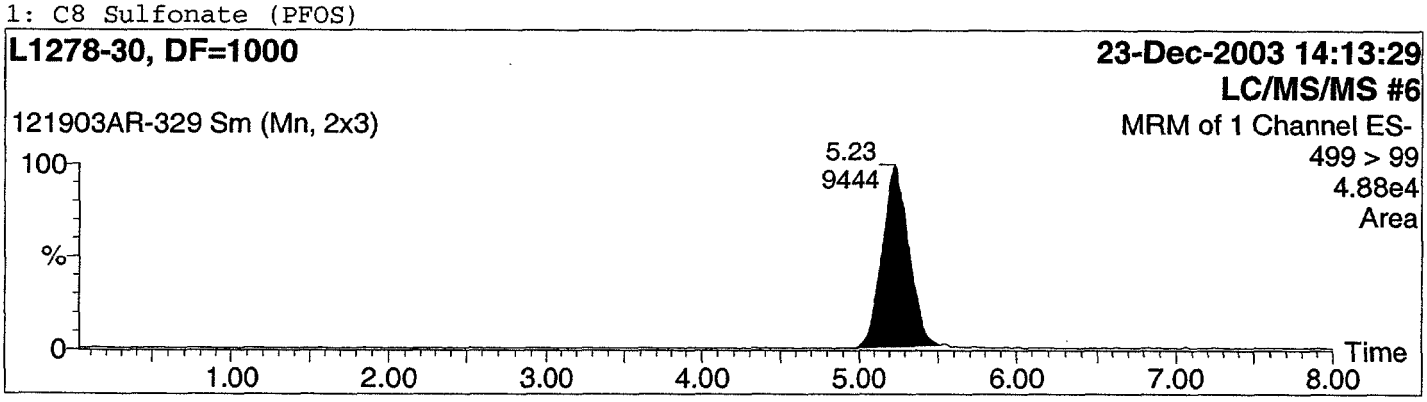


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-329
Text:

1: C8 Sulfonate (PFOS)

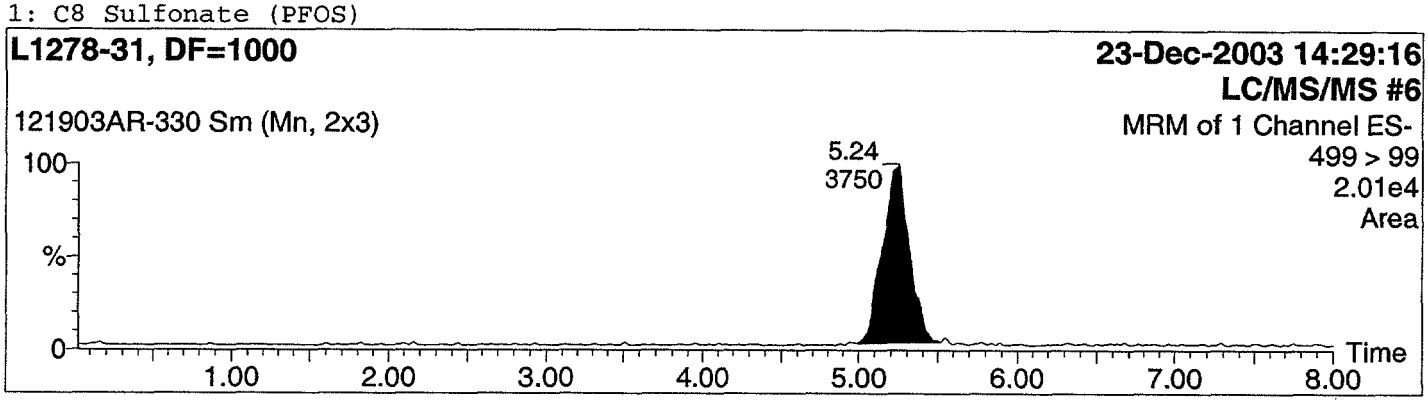


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-330
Text:

1: C8 Sulfonate (PFOS)

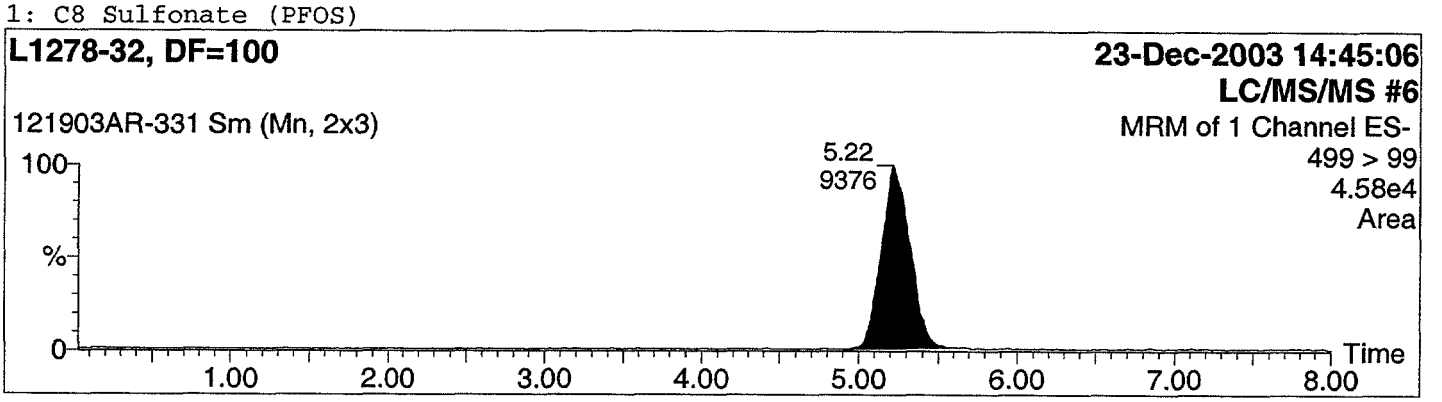


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-331
Text:

1: C8 Sulfonate (PFOS)

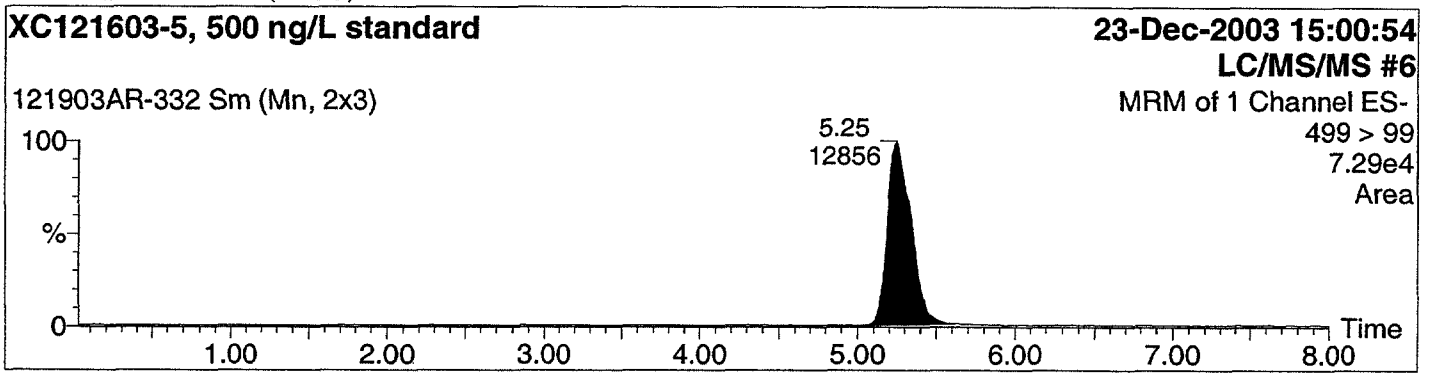


Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

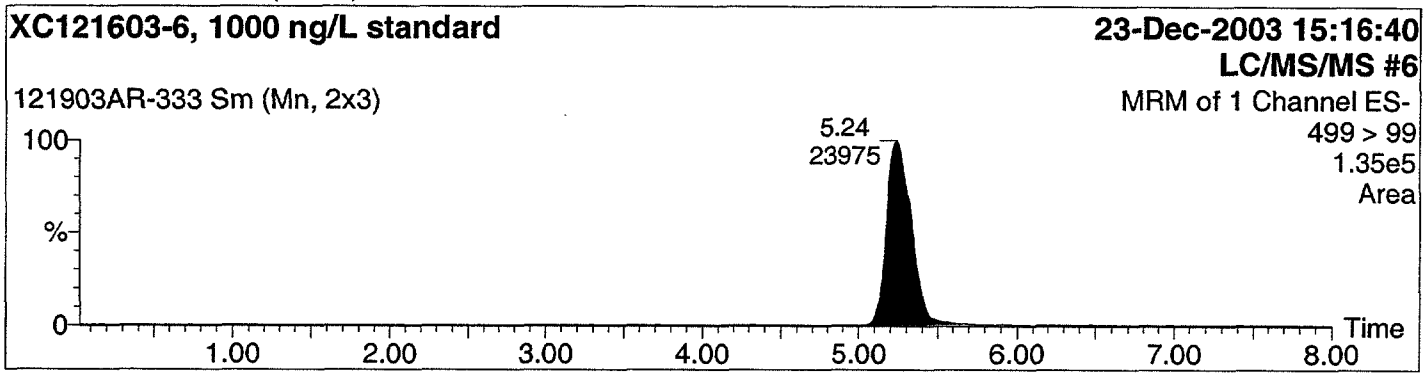
Name: 121903AR-332
Text:

1: C8 Sulfonate (PFOS)



Sample List: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\SampleDB\121903AR Soil
Last modified: Tue Dec 23 15:57:03 2003
Method: P:\Data\LCMSMS6\Masslynx\Fluorochemicals.PRO\MethDB\PFOS only 121803
Last modified: Tue Dec 23 16:00:17 2003
Job Code:

Printed: Wed Dec 24 08:37:58 2003

Name: 121903AR-333
Text:

1: C8 Sulfonate (PFOS)